AV Control Stereo Receiver

Technics®

Operating Instructions

Model No. **SA-DX940**

The photographs show the black model for the United Kingdom.

Note:
The "EB" indication shown on the packing case indicates United Kingdom.

Before connecting, operating or adjusting this product, please read these instructions completely.
Please keep this manual for future reference.

RQT5425-B

Dear Customer

Thank you for purchasing this product.
For optimum performance and safety, please read these instructions carefully.

These operating instructions are applicable to models for the United Kingdom, Australia and N.Z., however, are intended primarily for the United Kingdom model.

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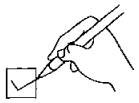
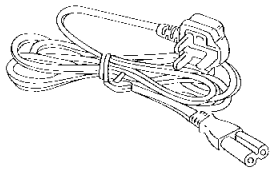
CAUTION!
DO NOT INSTALL OR PLACE THIS UNIT IN A BOOKCASE, BUILT IN CABINET OR IN ANOTHER CONFINED SPACE. ENSURE THE UNIT IS WELL VENTILATED.
ENSURE THAT CURTAINS AND ANY OTHER MATERIALS DO NOT OBSTRUCT THE VENTILATION TO PREVENT RISK OF ELECTRIC SHOCK OR FIRE HAZARD DUE TO OVERHEATING.

Supplied accessories

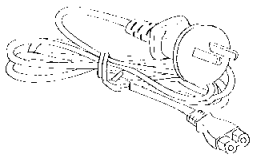


Please check and identify the supplied accessories.

☐ AC mains lead (1)

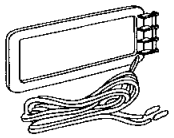


For the United Kingdom (VJA0733)



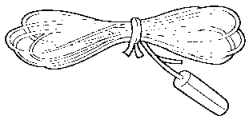
For Australia and N.Z. (RJA0035-X)

☐ AM loop antenna set
- AM loop antenna (1)
- AM loop antenna holder (1)
- Screw (1)



(RSA0012)

☐ FM indoor antenna (1)

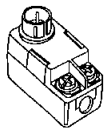


(RSA0007)

☐ Antenna plug adapter (1)

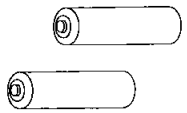
For the United Kingdom (SJP9009)

☐ Antenna plug (1)



For Australia and N.Z. (RFE0014)

☐ Batteries (2)



☐ Remote control (1)

For the United Kingdom (EUR647139)

For Australia and N.Z. (EUR647140)

Use numbers indicated in parentheses when asking for replacement parts.

Safety precautions

Placement

Set the system up on an even surface away from direct sunlight, high temperatures, high humidity, and excessive vibration. These conditions can damage the cabinet and other components, thereby shortening the unit's service life.
Place it at least 15 cm away from wall surfaces to avoid distortion and unwanted acoustical effects.
Do not place heavy items on the unit.

Voltage

Do not use high voltage power sources. This can overload the unit and cause a fire.
Do not use a DC power source. Check the source carefully when setting the unit up on a ship or other place where DC is used.

AC mains lead protection

Ensure the AC mains lead is connected correctly and not damaged. Poor connection and lead damage can cause fire or electric shock.
Do not pull, bend, or place heavy items on the lead.
Grasp the plug firmly when unplugging the lead. Pulling the AC mains lead can cause electric shock.
Do not handle the plug with wet hands. This can cause electric shock.

Foreign matter

Do not let metal objects fall inside the unit. This can cause electric shock or malfunction.
Do not let liquids get into the unit. This can cause electric shock or malfunction. If this occurs, immediately disconnect the unit from the power supply and contact your dealer.
Do not spray insecticides onto or into the unit. They contain flammable gases which can ignite if sprayed into the unit.

Service

Do not attempt to repair this unit by yourself. If sound is interrupted, indicators fail to light, smoke appears, or any other problem that is not covered in these instructions occurs, disconnect the AC mains lead and contact your dealer or an authorized service center. Electric shock or damage to the unit can occur if the unit is repaired, disassembled or reconstructed by unqualified persons.

Extend operating life by disconnecting the unit from the power source if it is not to be used for a long time.

(For United Kingdom)

("EB" area code model only)

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.
A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362.
Check for the ASTA mark ⟨ASTA⟩ or the BSI mark ⟨BSI⟩ on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local dealer.

CAUTION!

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.
THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted please observe the wiring code as stated below.
If in any doubt please consult a qualified electrician.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:
Blue: Neutral, Brown: Live.
As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black or Blue.
The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Brown or Red.

WARNING: DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH THE LETTER E, BY THE EARTH SYMBOL ⏚ OR COLOURED GREEN OR GREEN/YELLOW.

THIS PLUG IS NOT WATERPROOF–KEEP DRY.

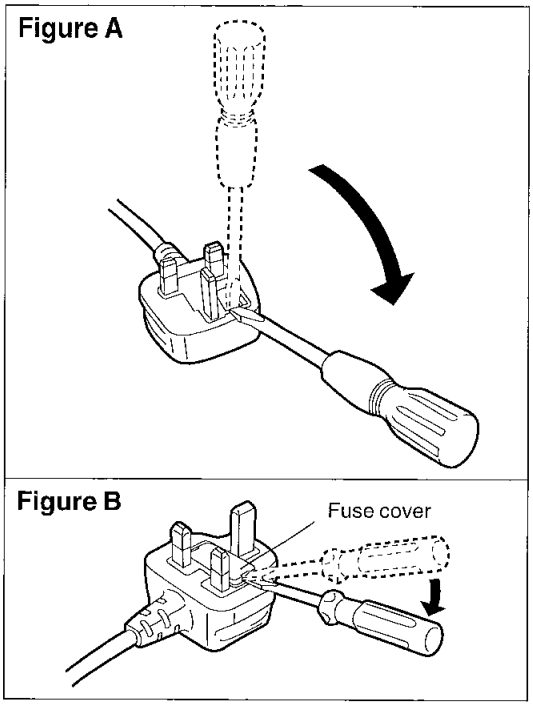
Before use

Remove the connector cover.

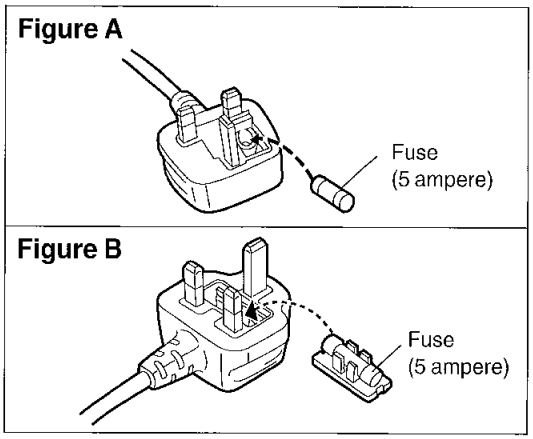
How to replace the fuse

The location of the fuse differ according to the type of AC mains plug (figures A and B). Confirm the AC mains plug fitted and follow the instructions below.
Illustrations may differ from actual AC mains plug.

1. Open the fuse cover with a screwdriver.



2. Replace the fuse and close or attach the fuse cover.

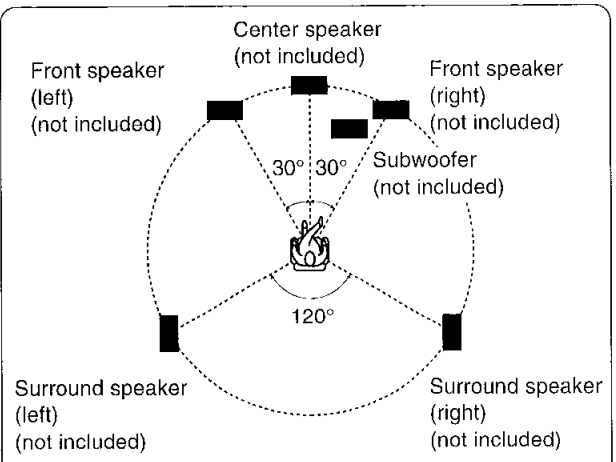


To enjoy surround sound

Do the connections, settings, and adjustments in the order shown to enjoy surround sound with this unit's DSP features.
Be sure to make the correct speaker settings. If, for example, you have not connected a center speaker and you leave the initial setting value of LARGE as it is, then dialog and other sounds may not be reproduced.

Connect the equipment
(➡ Pages 10–13.)

Position and connect the speakers
(➡ Pages 14 and 15.)



The front, center, and surround speakers should be placed at approximately the same distance from the listening position. The angles in the diagram are approximate.

Set the presence and type (small/large), distance and filter of the speakers you have connected
(➡ Pages 16–18.)

Front, Center, and Surround speakers

In SIZE
Select LARGE or SMALL for the front speakers
Select LARGE, SMALL, or NONE for the center and surround speakers

In DISTANCE
Enter the distance of each speaker from the listening position

In FILTER
Enter the cutoff frequency for your subwoofer based on the bass capability of your front speakers

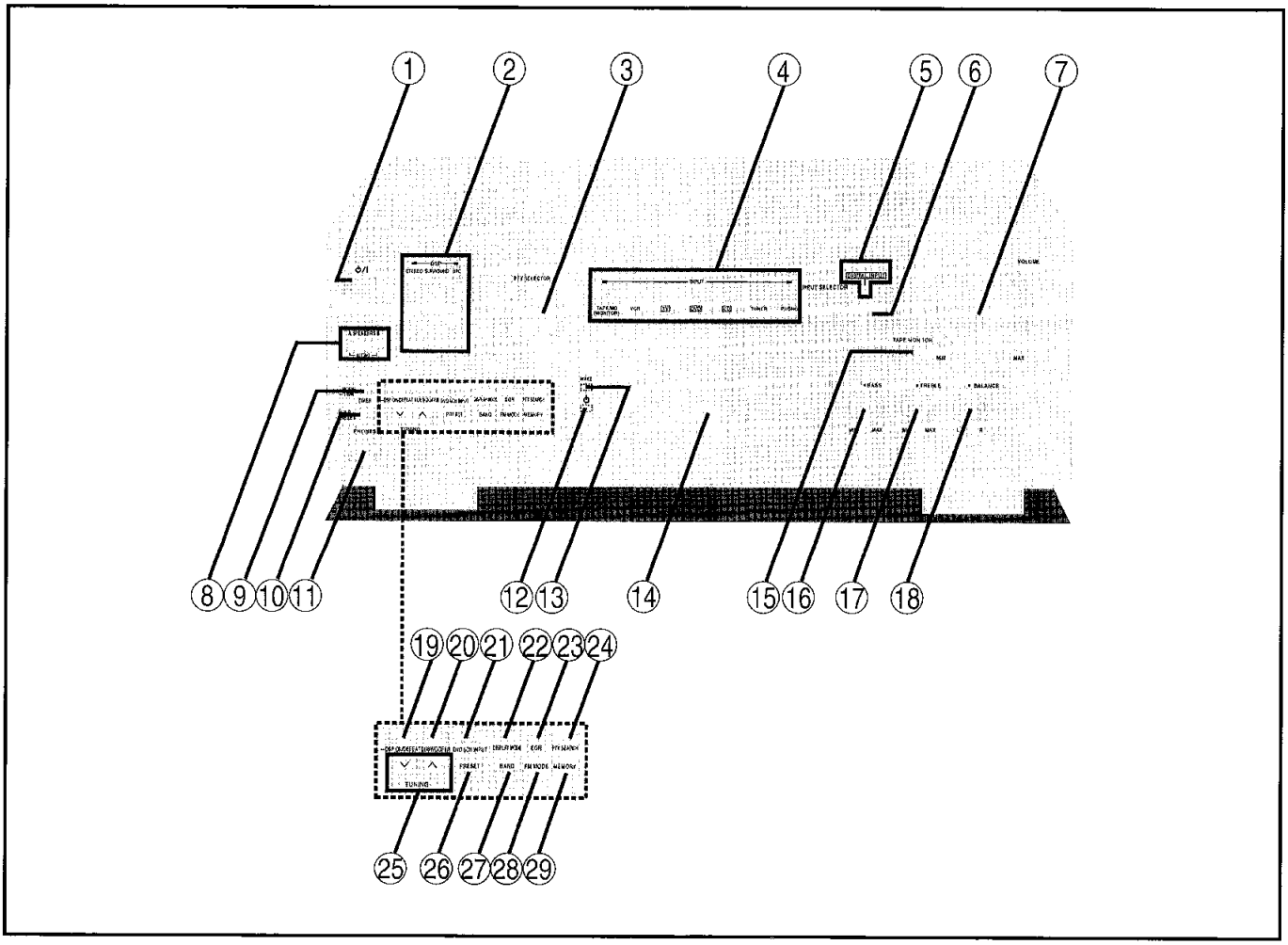
SUBWOOFER
Select ON or OFF

Adjust the level for the speakers
(➡ Page 19.)

While sitting in the usual listening position, use the test signal to adjust the volume of the speakers to the same apparent level.

Sit back and enjoy the experience
(➡ Pages 22 and 23.)

Front panel controls



Main unit

No.	Name	Ref.page

① **Standby/on switch (⏻ /I)** 16
Press to switch the unit from on to standby mode or vice versa.
In standby mode, the unit is still consuming a small amount of power.

② **DSP mode selector (DSP)** 22

③ For the United Kingdom
PTY selector (PTY SELECTOR) 31
For Australia and N.Z.
SFC mode selector (SFC MODE) 17, 21

④ **Input indicators (INPUT)** 22

⑤ **Digital input select button/indicator (DIGITAL INPUT)** 22

⑥ **Input selector (INPUT SELECTOR)** 22

⑦ **Volume control (VOLUME)** 23

⑧ **Speaker select buttons (SPEAKERS A, B)** 16, 22

⑨ **Timer button (TIMER, -MODE, –TIME)** 37

⑩ **Help/reset button (-HELP, –RESET)** 39

⑪ **Headphones jack (PHONES)** 35

⑫ **Standby indicator (⏻)**
When the unit is connected to the AC mains supply, this indicator lights up in standby mode and goes out when the unit is turned on.

No.	Name	Ref.page

⑬ **Wake indicator (WAKE)** 37

⑭ **Display section** 7

⑮ **Tape monitor button (TAPE MONITOR)** 25

⑯ **Bass control (BASS)** 24

⑰ **Treble control (TREBLE)** 24

⑱ **Balance control (BALANCE)** 24

⑲ **Digital signal processor on/defeat button (–DSP ON/DEFEAT)** 21, 26

⑳ **Subwoofer button (SUBWOOFER)** 18, 24

㉑ **DVD 6ch input button (DVD 6CH INPUT)** 34

㉒ For the United Kingdom
RDS display mode select button (DISPLAY MODE) 30

㉓ For the United Kingdom
EON button (EON) 32

㉔ For the United Kingdom
PTY search button (PTY SEARCH) 31

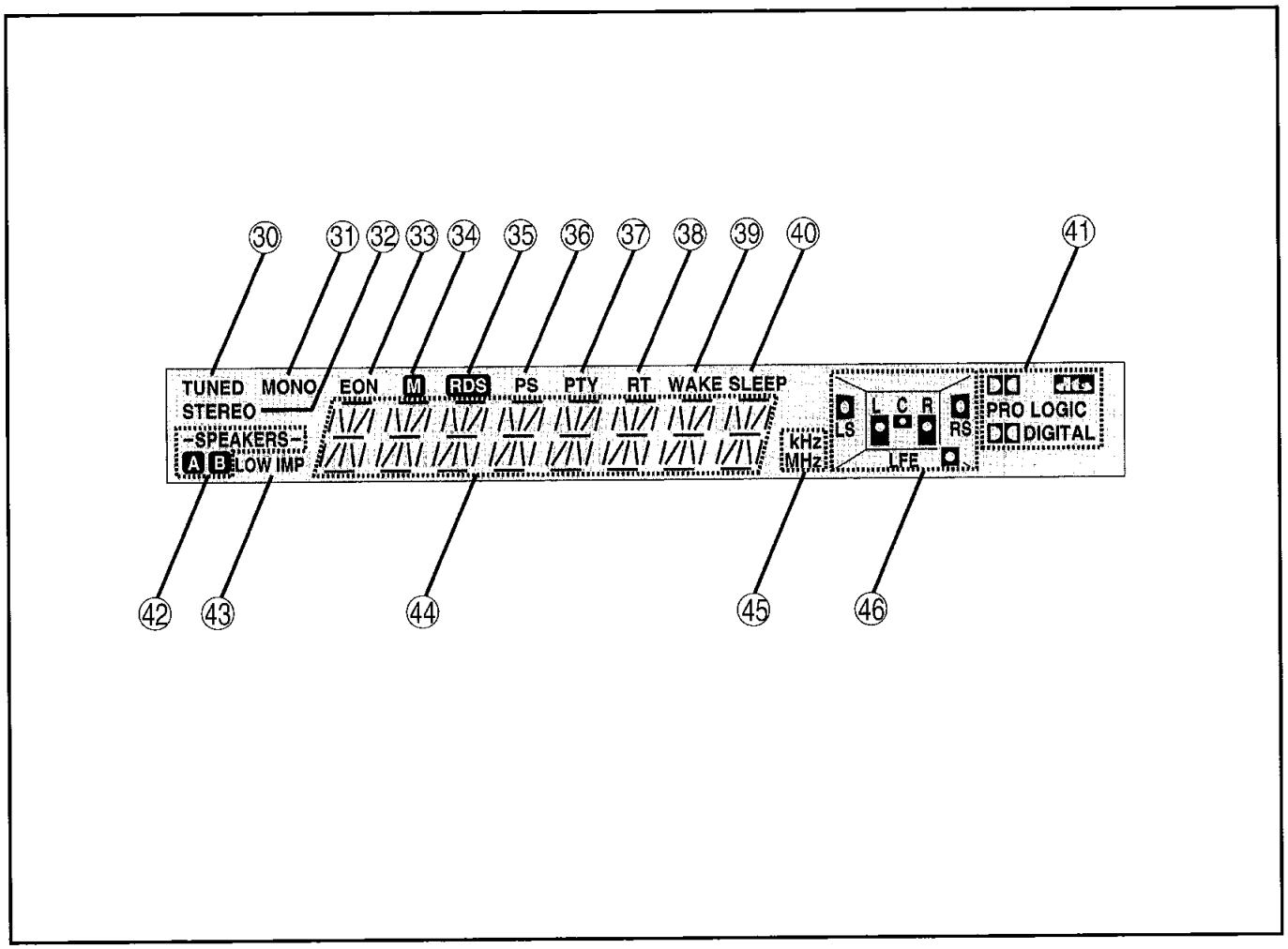
㉕ **Tuning buttons (TUNING ∨, ∧)** 26

㉖ **Preset channel button (PRESET)** 29

㉗ **Band select button (BAND)** 26

㉘ **FM mode select button (FM MODE)** 26

㉙ **Memory button (MEMORY)** 28



Display section

No.	Name	Ref.page
㉚	Tuned indicator (TUNED)	26
㉛	Monaural indicator (MONO)	26
㉜	Stereo indicator (STEREO)	26
㉝	For the United Kingdom EON indicator (EON)	32
㉞	Memory indicator (M)	28
㉟	For the United Kingdom RDS indicator (RDS)	30
㊱	For the United Kingdom PS indicator (PS)	30
㊲	For the United Kingdom PTY indicator (PTY)	30
㊳	For the United Kingdom RT indicator (RT)	30
㊴	Wake indicator (WAKE)	37
㊵	Sleep indicator (SLEEP)	37
㊶	Signal format indicators (dts, DD PRO LOGIC, DD DIGITAL)	20
㊷	Front speaker indicator (-SPEAKERS- A B)	22
㊸	Low impedance indicator (LOW IMP)	25
㊹	Display	
㊺	Frequency unit indicator (kHz, MHz)	26
㊻	Speaker indicators and Signal input indicators (L, C, R, LS, RS, LFE)	18

The signal input indicators light up to indicate the channels contained in the input signal.
L: Front channel (left)
C: Center channel
R: Front channel (right)
LS: Surround channel (left)
RS: Surround channel (right)

If the surround channel is monaural, LS and RS are displayed as S.

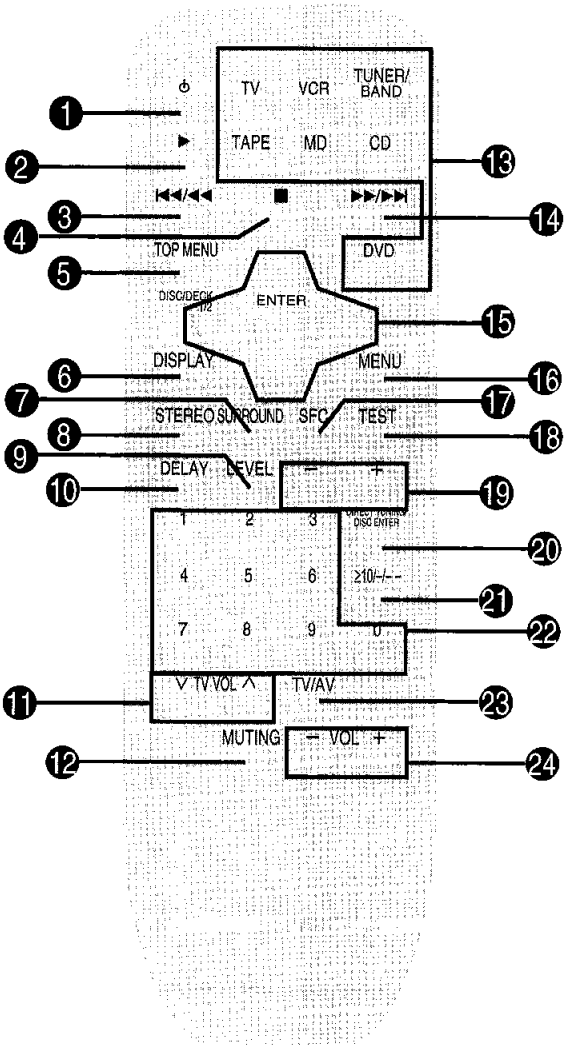
"LFE" (Low Frequency Effect) is a channel for the deep-bass effect in the low frequency range.

Remote control

The pages referred to on this page are in the booklet "How to use the remote control transmitter." The page numbers in boxes (e.g. 19) refer to pages in this manual.

The remote control shown is for the United Kingdom.

The remote control for Australia and N.Z. does not have an [MD] button.



No.	Name	Ref.page
❶	Standby/on button (⏻)	2
❷	▶ button (▶)	5
❸	⏮ / ◀◀ button (⏮ / ◀◀)	5
❹	■ button (■)	5
❺	Top menu, disc/deck 1/2 select button (TOP MENU, DISC/DECK 1/2)	6
❻	Display button (DISPLAY)	8
❼	Surround mode select button (SURROUND)	4
❽	Stereo mode select button (STEREO)	4
❾	Speaker channel select button (LEVEL)	19, 4
❿	Delay time button (DELAY)	23, 4
⓫	TV volume buttons (∨TV VOL∧)	7
⓬	Muting button (MUTING)	35, 2
⓭	Input select buttons (TV, VCR, TUNER/BAND, TAPE, MD, CD, DVD)	2
⓮	▶▶ / ▶▶⏭ button (▶▶ / ▶▶⏭)	5
⓯	Cursor/enter buttons	8
⓰	Menu button (MENU)	8
⓱	SFC mode select button (SFC)	21, 22, 4
⓲	Test button (TEST)	19, 4
⓳	Delay time/level adjust buttons (–, +)	19, 4
⓴	Direct tuning/disc enter button (DIRECT TUNING/DISC ENTER)	27, 4
㉑	≥10/-/– – button (≥10/-/– –)	4
㉒	Numbered buttons	27, 4
㉓	TV/AV select button (TV/AV)	7
㉔	Volume buttons (– VOL +)	19, 2

Concerning the remote control

A Battery installation

Use of batteries

- Align the poles (+ and –) properly when inserting the batteries. Press in and down towards the minus end.
- Do not mix old and new batteries or different types of batteries.
- Do not recharge ordinary dry cell batteries.
- Do not heat or disassemble the batteries. Do not allow them to contact flame or water.
- Remove the batteries if the unit is not to be used for a long time.
- Do not keep together with metallic objects such as necklaces.
- Do not use rechargeable type batteries.
- Do not use batteries if the covering has been peeled off.

Mishandling of batteries can cause electrolyte leakage which can damage items the fluid contacts and may cause a fire.
If electrolyte leaks from the batteries, consult your dealer.
Wash thoroughly with water if electrolyte comes in contact with any part of your body.

B Correct method of use

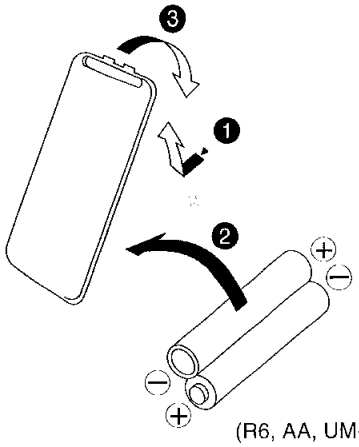
Operation notes

- Do not place obstacles between the remote control signal sensor and remote control unit.
- Do not expose the remote control signal sensor to direct sunlight or to the bright light of a fluorescent light.
- Take care to keep the remote control signal sensor and end of the remote control unit free from dust.
- If the unit is installed in a rack with glass doors, the glass doors' thickness or color might make it necessary to use the remote control a shorter distance from the unit.

To prevent damage

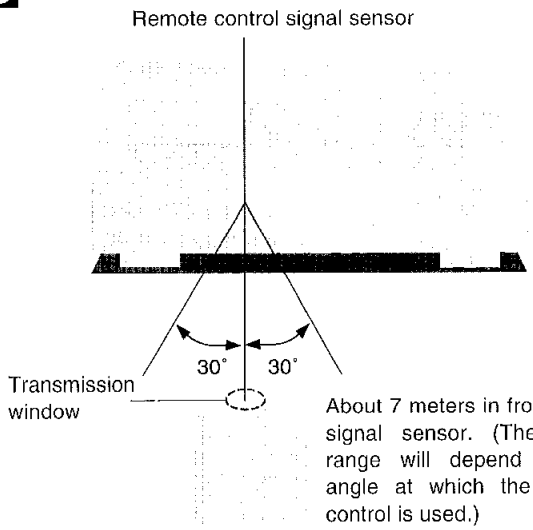
- Never place heavy items on top of the unit.
- Do not disassemble or reconstruct the unit.
- Do not spill water or other liquids into the unit.

A



(R6, AA, UM-3)

B

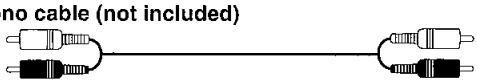


About 7 meters in front of the signal sensor. (The actual range will depend on the angle at which the remote control is used.)

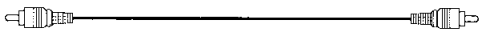
Connections

Stereo phono cable (not included)

White (L)
Red (R)



Video connection cable (not included)



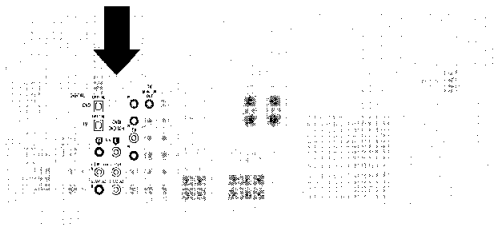
Make sure that the power supply for all components has been turned off before making any connections.

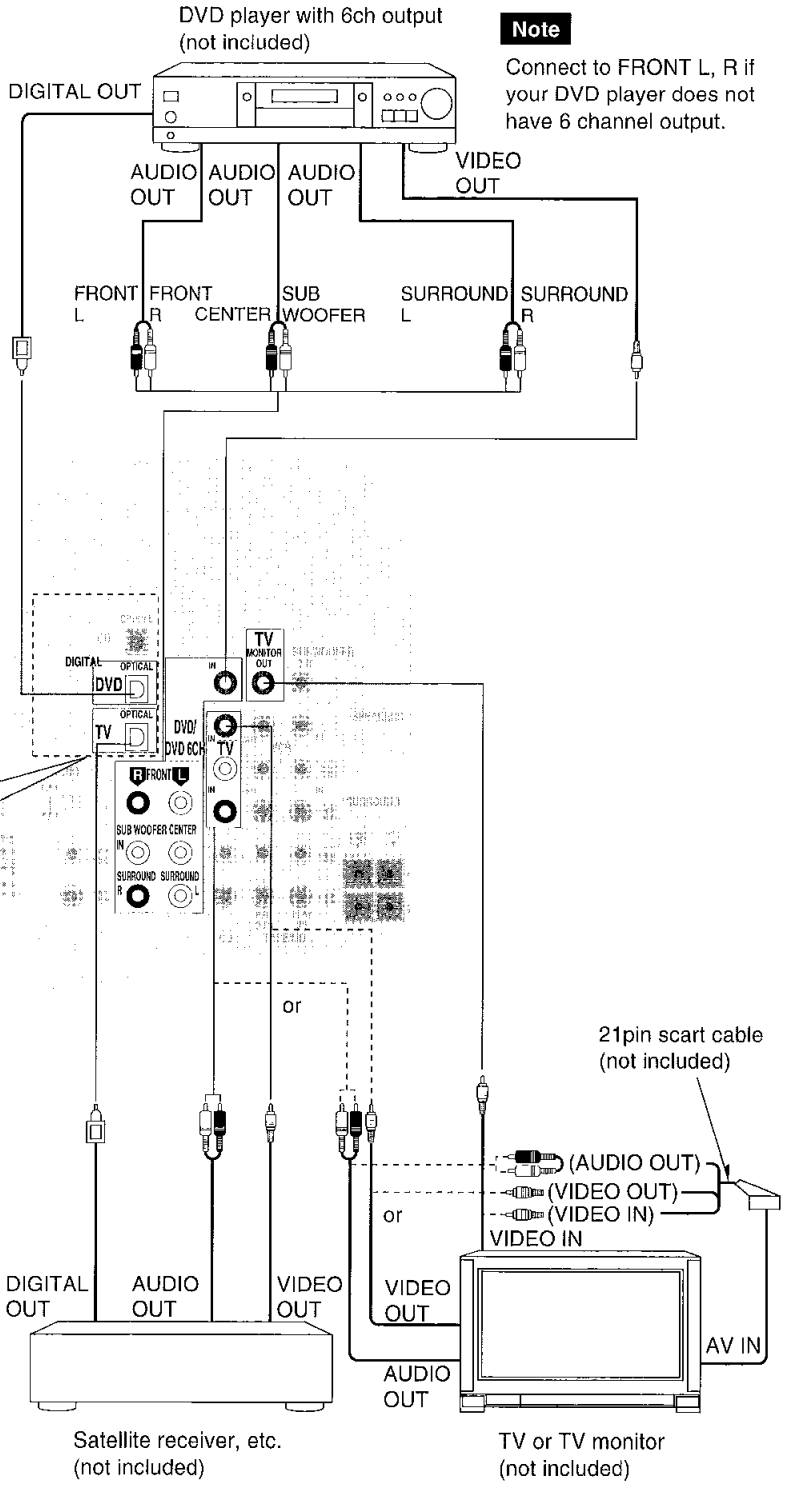
To connect equipment, refer to the appropriate operating instructions.

Note

Use digital connection to enjoy Dolby Digital or DTS (➡ page 20). Analog connection is necessary if you intend to record the source (➡ page 36).

Connecting a TV and a DVD player



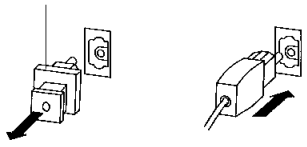


Note

Connect to FRONT L, R if your DVD player does not have 6 channel output.

Connection for optical fiber cable

Dust-protection cap



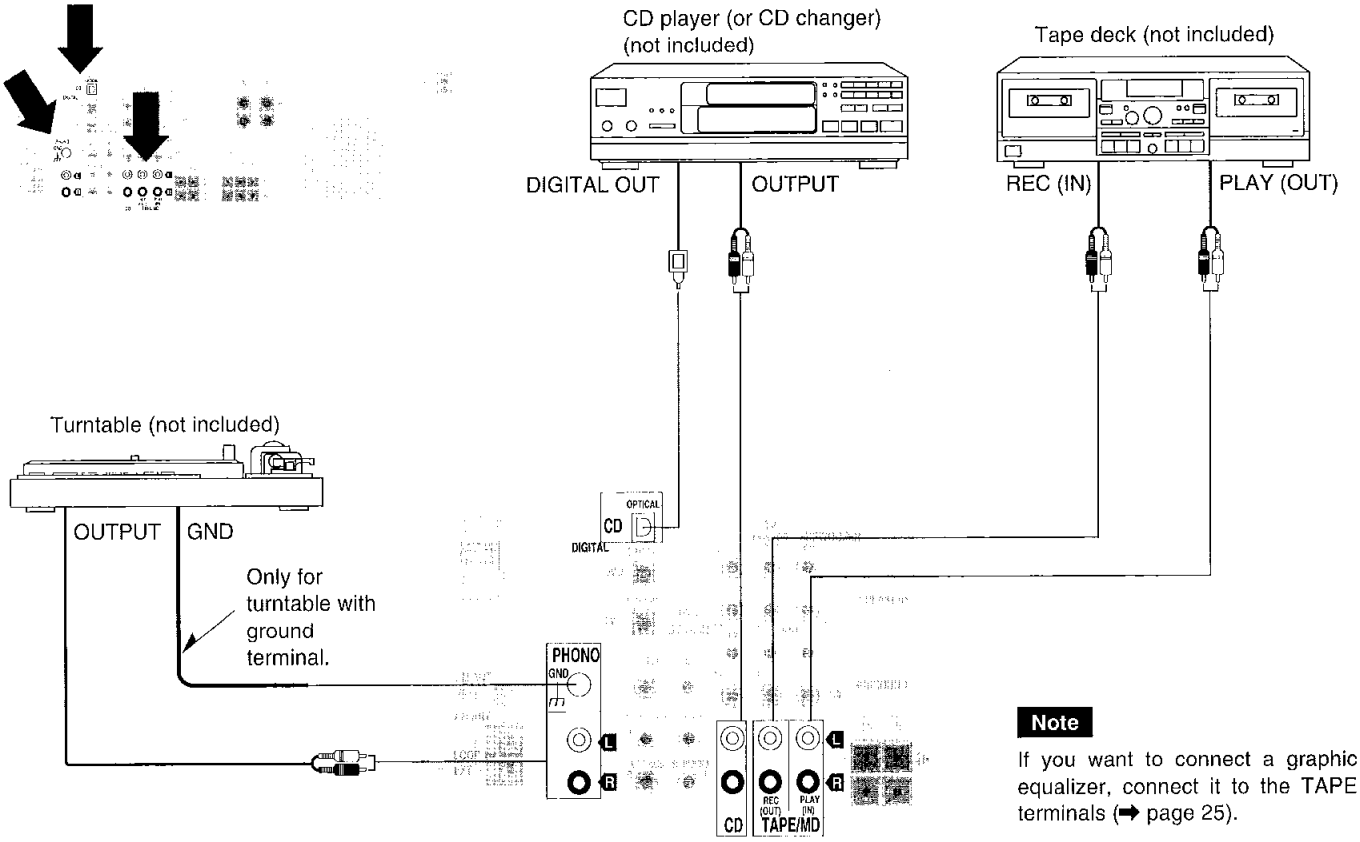
- Do not bend the optical fiber cable.
- If the digital optical connector is not going to be used, be sure to attach the dust-protection cap to prevent exposure to dust.

Note

Dolby Digital RF (radio frequency) signals cannot be decoded with this unit.

Optical fiber cable (not included)

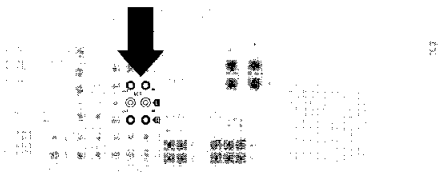
Connecting audio equipment

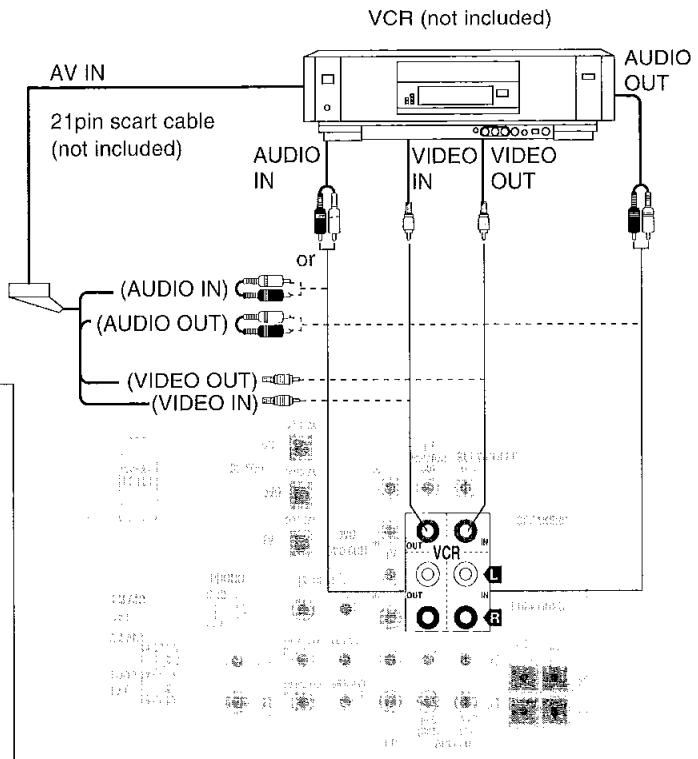


Note

If you want to connect a graphic equalizer, connect it to the TAPE terminals (➡ page 25).

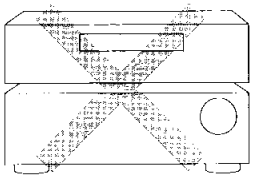
Connecting video equipment





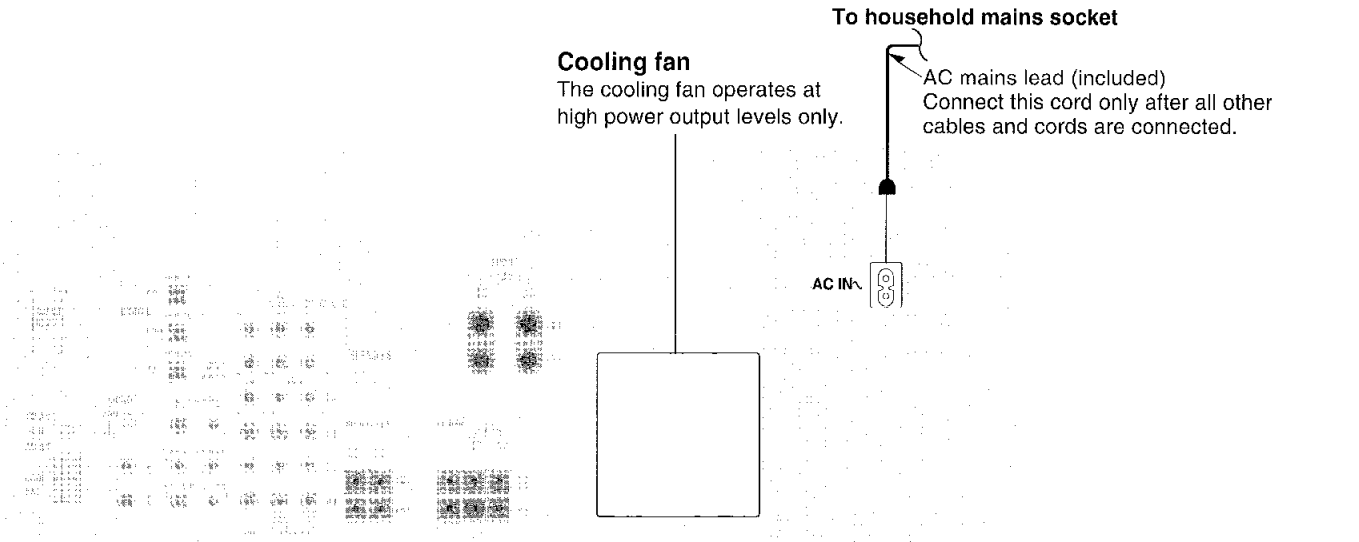
CAUTION

Do not place anything on top of this unit or block the heat radiation vents in any way.
In particular, do not place tape decks or CD/DVD players on this unit as heat radiated from it can damage your software.



NO

Connecting the AC mains lead


To household mains socket
Cooling fan
The cooling fan operates at high power output levels only.
AC mains lead (included)
Connect this cord only after all other cables and cords are connected.
AC IN

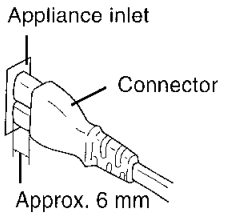
Note

The included AC mains lead is for use with this unit only.
Do not use it with other equipment.

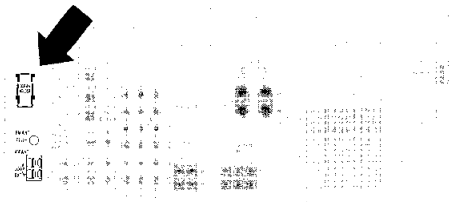
(For United Kingdom only)
BE SURE TO READ THE CAUTION FOR THE AC MAINS LEAD ON PAGE 4 BEFORE CONNECTION.

Insertion of Connector

Even when the connector is perfectly inserted, depending on the type of inlet used, the front part of the connector may jut out as shown in the drawing.
However there is no problem using the unit.

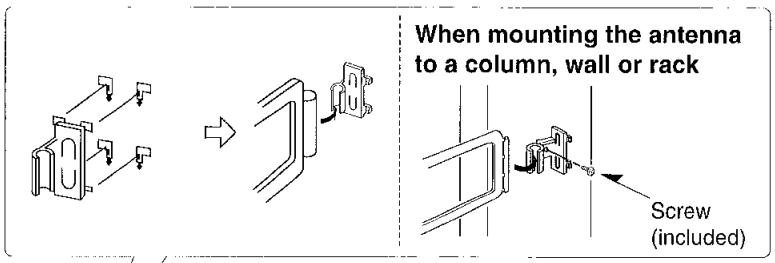


Antenna connections



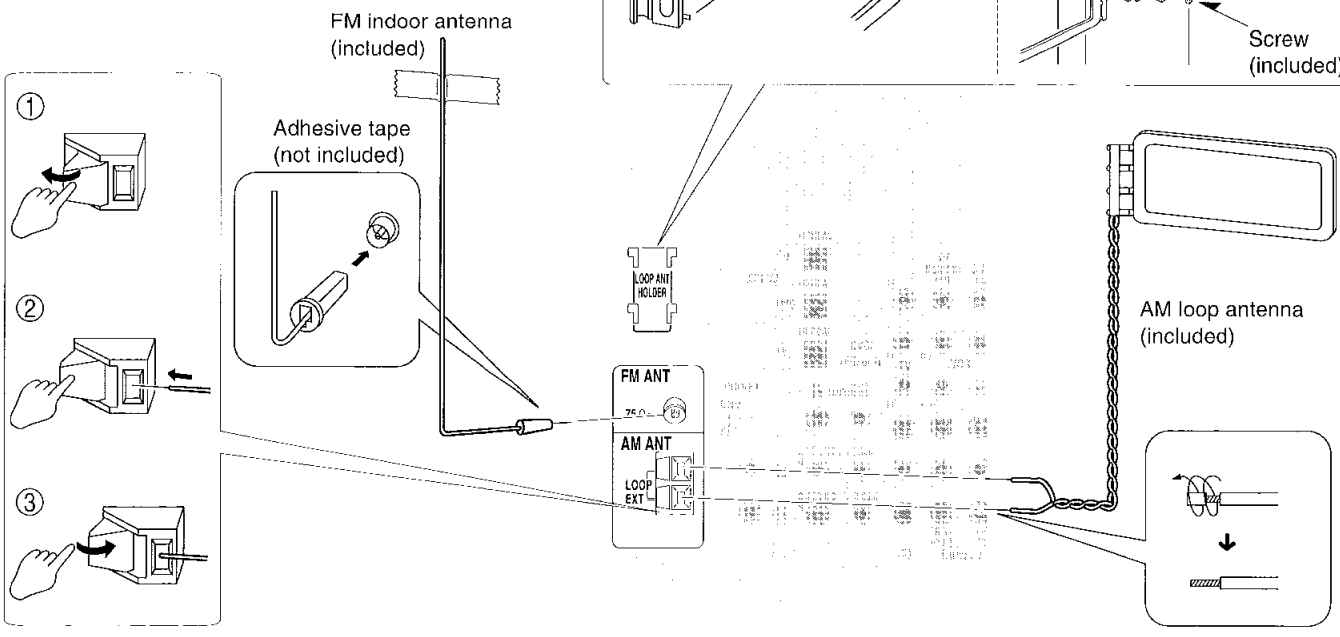
AM loop antenna

- Fit the AM loop antenna holder (included) onto the rear panel of this unit and then attach the AM loop antenna to the AM loop antenna holder (facing in the direction of best reception).
- Keep loose antenna cord away from other wire cords or a tapedeck.



FM antenna

Fix the other end of the antenna where reception is best.

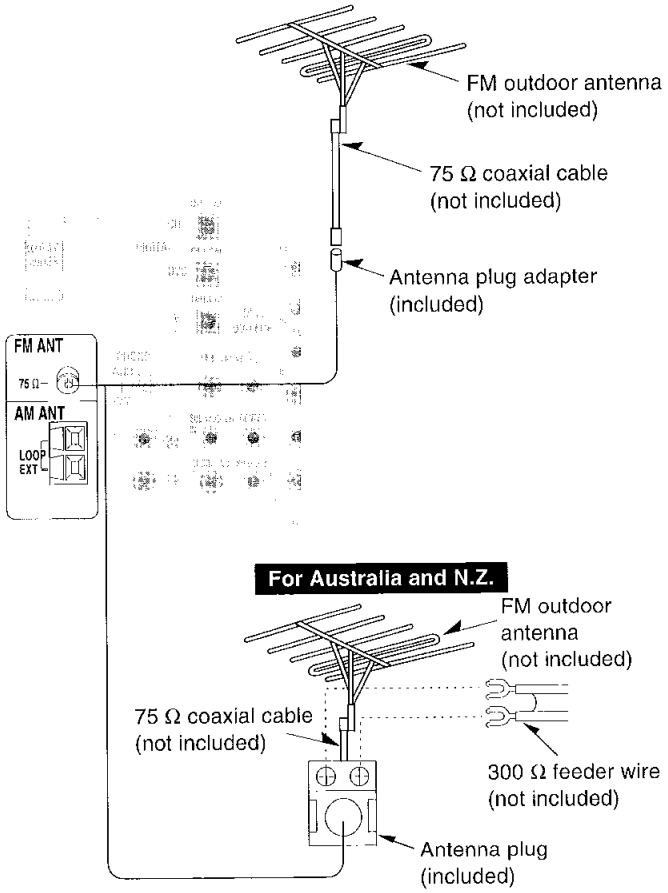


To connect an outdoor antenna

FM outdoor antenna

- Disconnect the FM indoor antenna.
- The antenna should be installed by a competent technician.

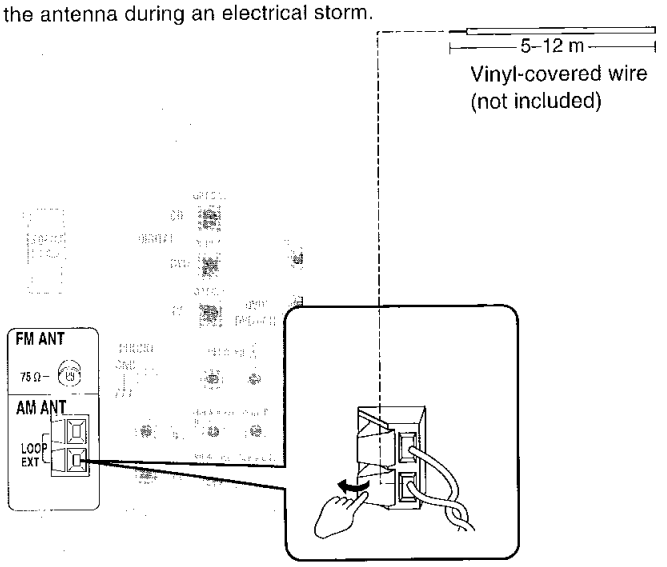
For the United Kingdom



For Australia and N.Z.

AM outdoor antenna

- Run a piece of vinyl wire horizontally across a window or other convenient location.
- Leave the loop antenna connected.
- Disconnect the antenna when the unit is not in use. Do not use the antenna during an electrical storm.



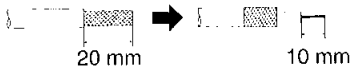
How to use the antenna plug (included)

For Australia and N.Z.

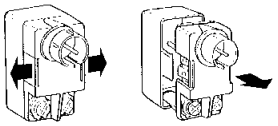
Two types of wire are most commonly used for connection from the antenna: 300 Ω parallel feeder wire or 75 Ω coaxial cable. For best resistance to outside interference, the use of 75 Ω coaxial cable is suggested.

• To connect a 75 Ω coaxial cable

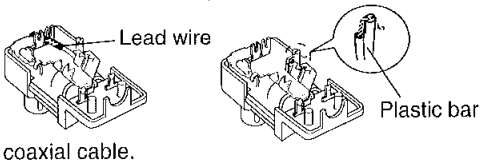
① Remove a piece of the outer vinyl insulator.



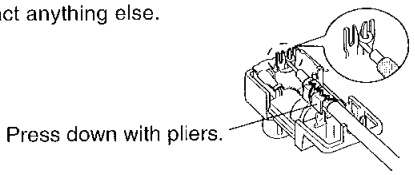
② Carefully pull the tabs apart to remove the cover.



③ Remove the lead wire and clamp it with the plastic bar.



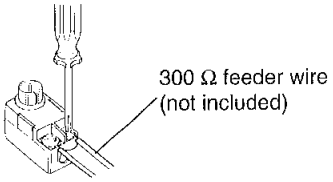
④ Install the coaxial cable.
Clamp the cable conductor, and wind it on so that it doesn't contact anything else.



⑤ Attach the cover.

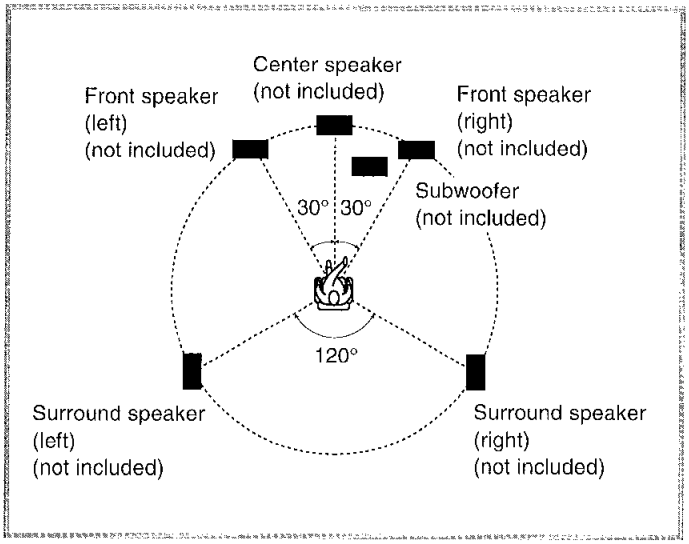
• To connect a 300 Ω feeder wire

Loosen the screws, connect the wires, and tighten the screws to secure the connection.



Speaker connections

Placement of speakers



Front speakers
Place on the left and right of the TV at seated ear height so that there is good coherency between the picture and sound.

Center speaker
Place underneath or above the center of the TV. Aim the speaker at the seating area.

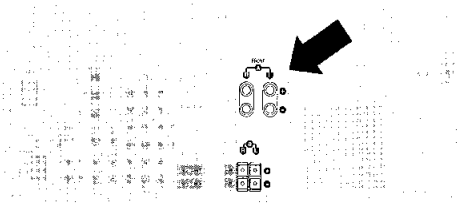
Surround speakers
Place on the side of or slightly behind the listening position, about one meter higher than ear level.

Subwoofer
The subwoofer can be placed in any position as long as it is at a reasonable distance from the TV.
Note that some experimentation can yield the smoothest low frequency performance. Placement near a corner can increase the apparent output level, but can result in unnatural bass.

Connecting speakers

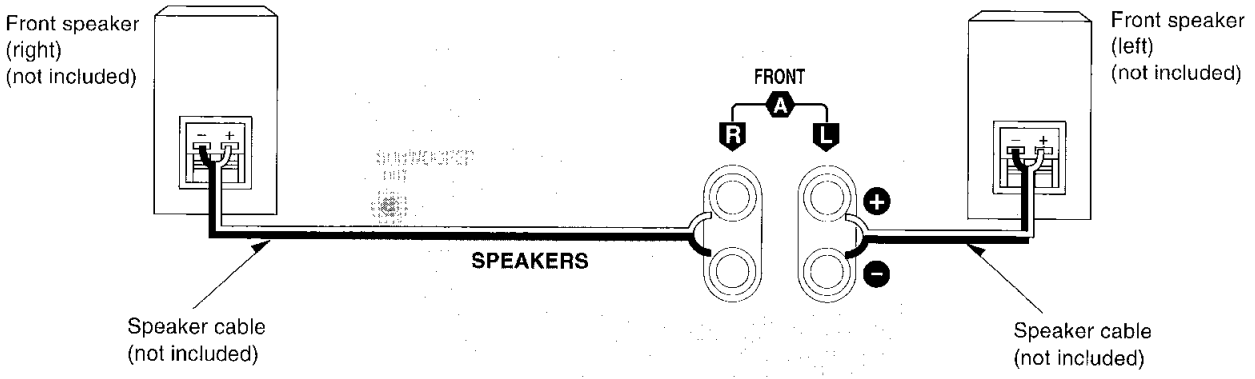
Other connections are possible depending on your speaker system.
See your speaker system's operating instructions for details.

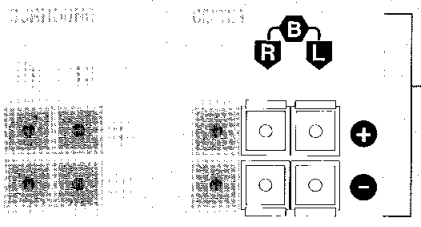
Front speakers



Speaker impedance:
A or B: 4–16 Ω
A and B: 8–16 Ω

Note
If you connect speakers with an impedance under 6 Ω, switch on "LOW IMP" (➡ page 25).



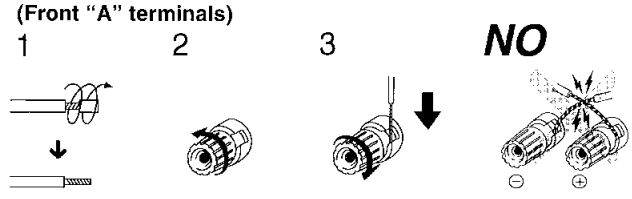


"B" terminals
For connection to a second pair of speakers.

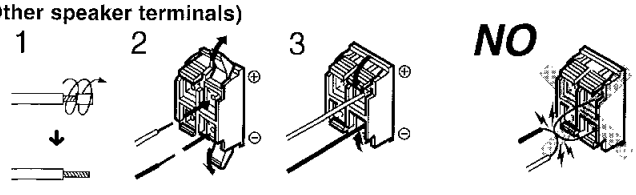
Note
Use the A terminals to enjoy Dolby Digital, Dolby Pro Logic, DTS, SFC and DVD 6CH INPUT.

Connecting the cables

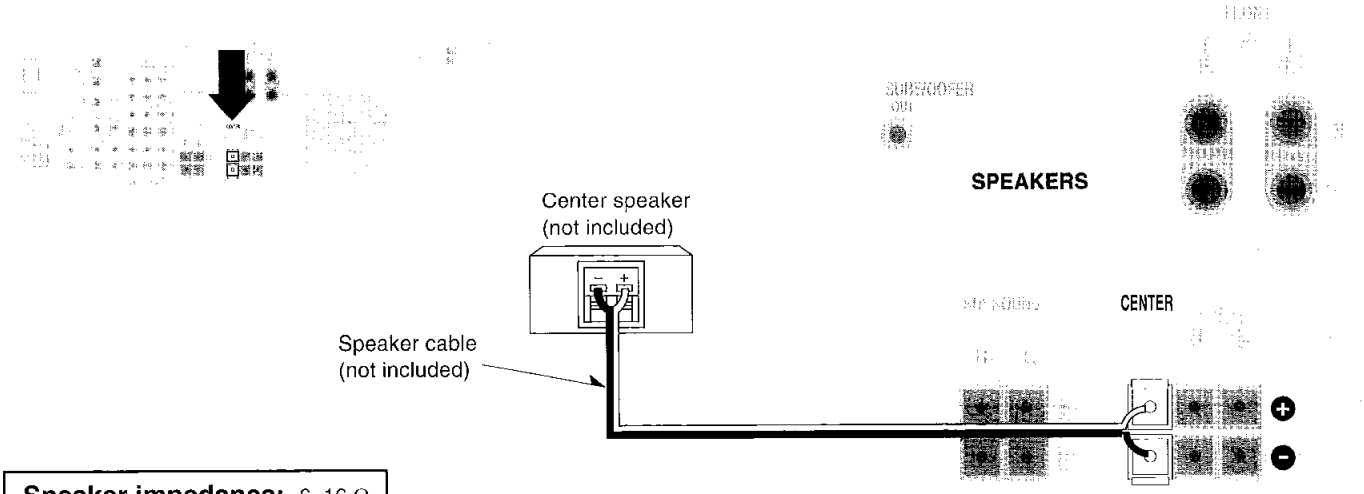
(Front "A" terminals)



(Other speaker terminals)

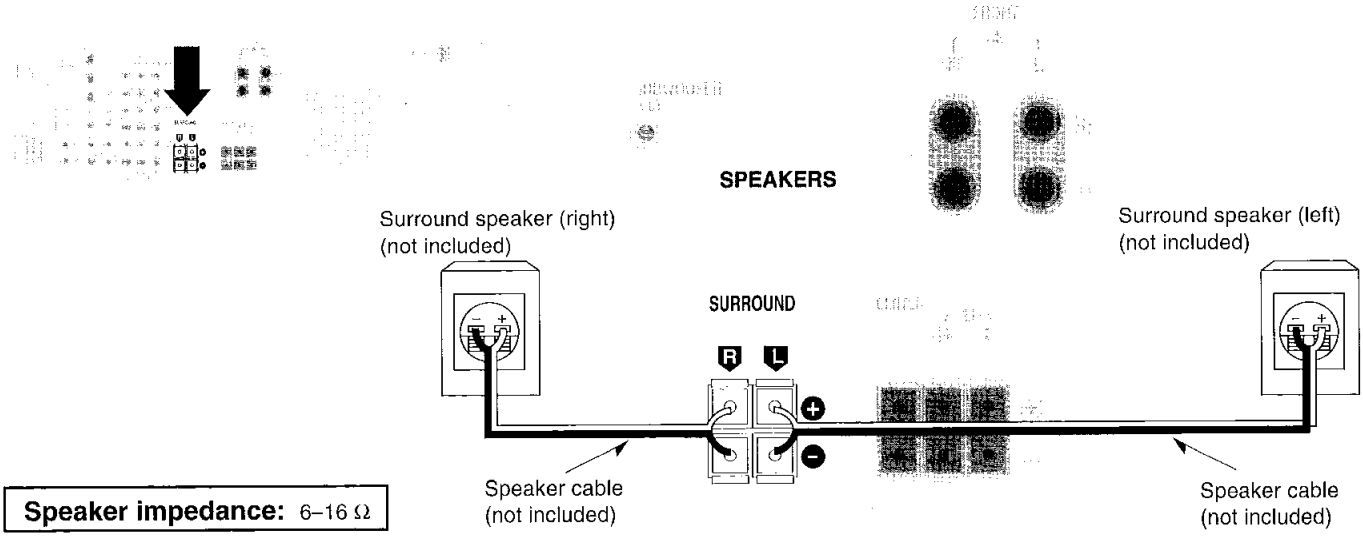


Center speaker



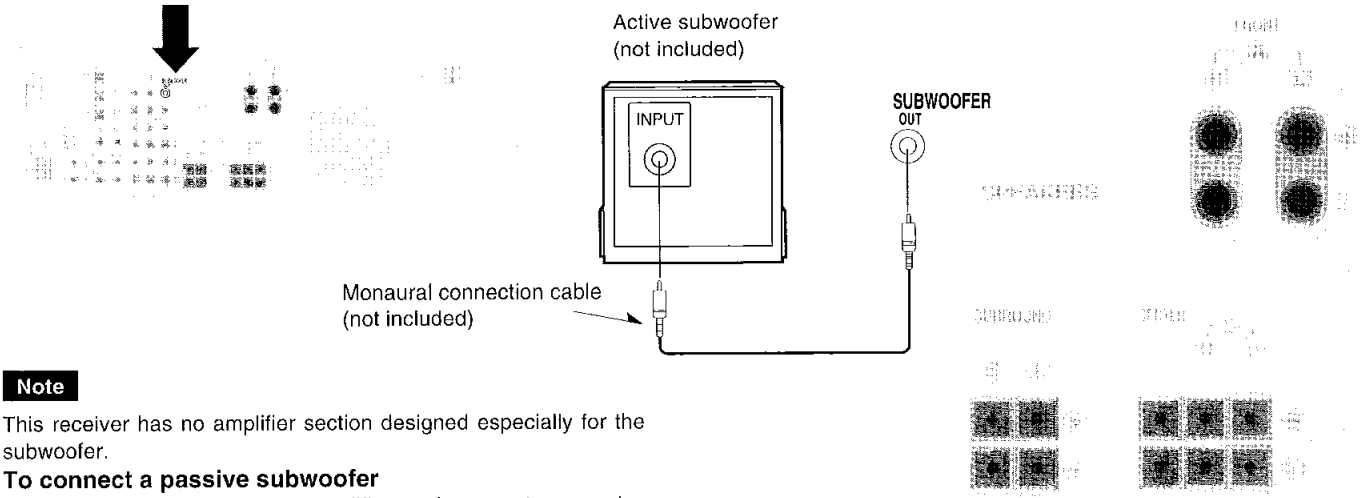
Speaker impedance: 6–16 Ω

Surround speakers



Speaker impedance: 6–16 Ω

Subwoofer

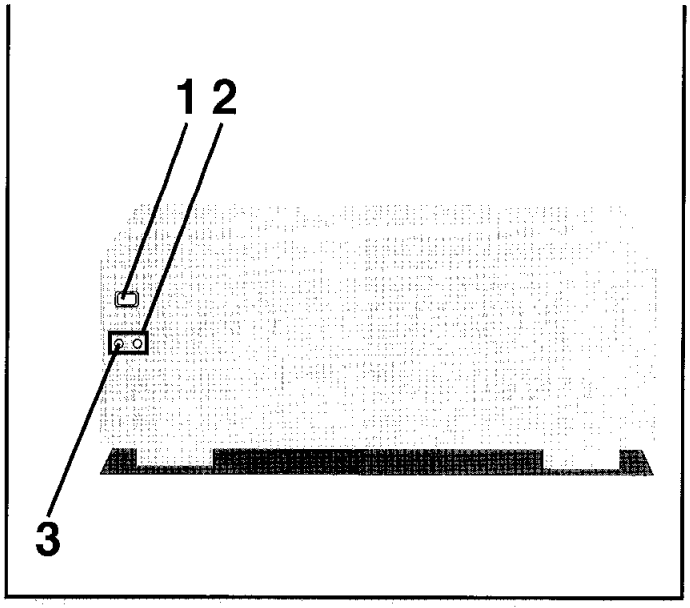


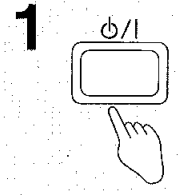
Note

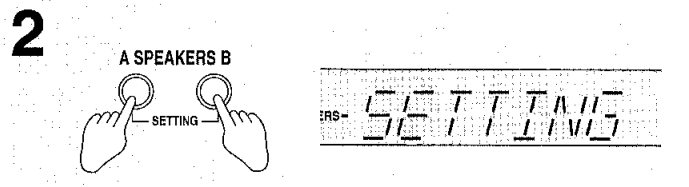
This receiver has no amplifier section designed especially for the subwoofer.

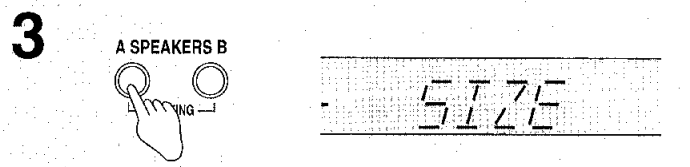
To connect a passive subwoofer

- You can connect another amplifier and connect a passive subwoofer to it.
- Connection to a passive subwoofer that has front speaker terminals is also possible.
  (See the operating instructions of the speaker system for details.)









Preparatory steps

Speaker settings

These settings should be done to get the most from the unit's reproduction modes (➡ pages 20 and 21).

Front, center, and surround channel settings

Set the SIZE, DISTANCE, and FILTER for your speakers.

In SIZE
Set the type (LARGE or SMALL) and presence of your speakers. Select "LARGE" if the speakers can produce bass (below around 100 Hz). Select "SMALL" if the speakers cannot produce bass. If you aren't using center or surround speakers select "NONE" so the sound is produced through the front speakers.
The speaker channels are all set to "LARGE" before shipping. If all your speakers are LARGE, you may skip this operation.

In DISTANCE
Enter the distance of each speaker from the listening position so the sound from the speakers reaches the listening position at the same time. The unit calculates the delay time for the center and surround speakers based on these distances.

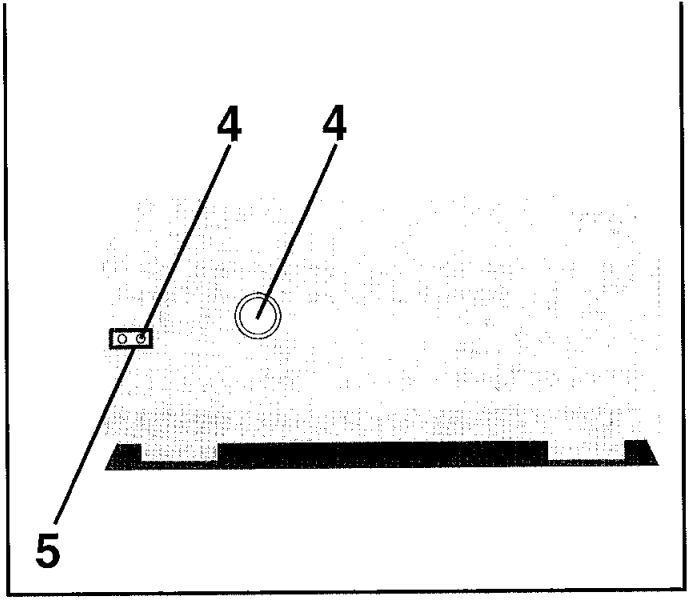
In FILTER
Enter the cutoff frequency for your subwoofer based on the bass capability of your front speakers
The factory setting is 100 Hz.

1 Press [⏻/I].

2 Press [A] and [B] at the same time.
"SETTING" appears on the display.

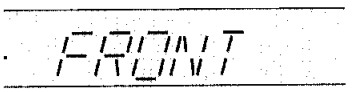
3 Press [A] to select what you want to set.
Each time the button is pressed the display changes as follows.
SIZE → DISTANCE → FILTER → DR COMP

(continued on next page)

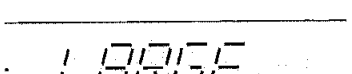


4 SIZE

① A SPEAKERS B — SETTING



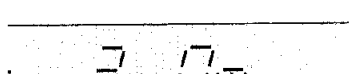
② PTY SELECTOR (SFC MODE)



DISTANCE

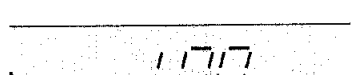
① A SPEAKERS B — SETTING

② PTY SELECTOR (SFC MODE)

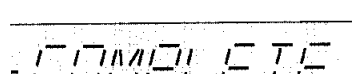


FILTER

PTY SELECTOR (SFC MODE)



5 A SPEAKERS B — SETTING



4 *When "SIZE" is selected*

① Press [B] to select the speaker channel to be set.

Each time the button is pressed the display changes as follows.

FRONT → CENTER → SURROUND

② Turn [PTY SELECTOR] ([SFC MODE]) to set the type (LARGE, SMALL) and presence (NONE) of the speaker.

Each time the selector is turned the display changes as follows.

Front:

SMALL ⇄ LARGE

Center, Surround:

NONE ⇄ SMALL ⇄ LARGE

Select "NONE" if a center and surround speaker isn't connected.

③ Repeat steps ① and ② to complete the size settings for the front, center and surround speakers.

When "DISTANCE" is selected

① Press [B] to select the speaker channel to be set.

Each time the button is pressed the display changes as follows.

FRONT → CENTER → SURROUND

② Turn [PTY SELECTOR] ([SFC MODE]) to set the distance.

Distance can be set at 0.1 m intervals between 1 m to 10 m.

The factory settings are as follows.

Front and center speakers:	3.0 m
Surround speakers:	1.5 m

③ Repeat steps ① and ② to complete the distance settings for the front, center and surround speakers.

When "FILTER" is selected

Turn [PTY SELECTOR] ([SFC MODE]) to set the cut off frequency.

Each time the selector is turned the display changes as follows.

100 ⇄ 150 ⇄ 200

5 Press [A] and [B] at the same time.

"COMPLETE" appears on the display.

If you allow about 10 seconds to elapse between settings, the procedure is cancelled, all settings are returned to how they were, and the previous display is restored. Begin again if this occurs.

For your reference:

The settings remain as they are until changed by the above procedure, even after the power has been turned off.

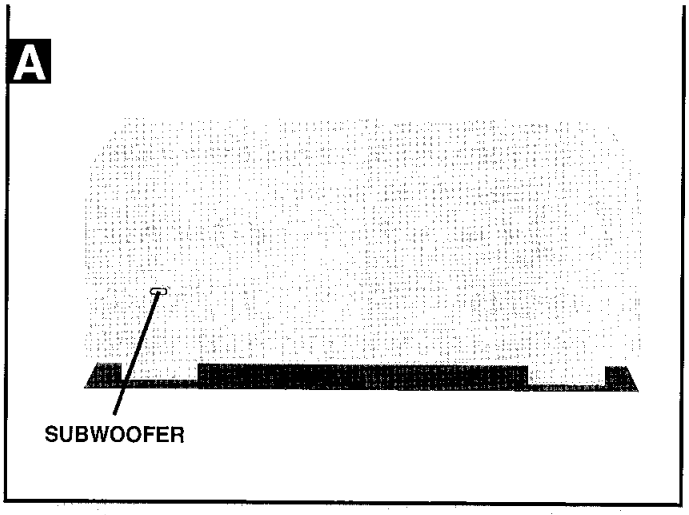
A Subwoofer channel setting

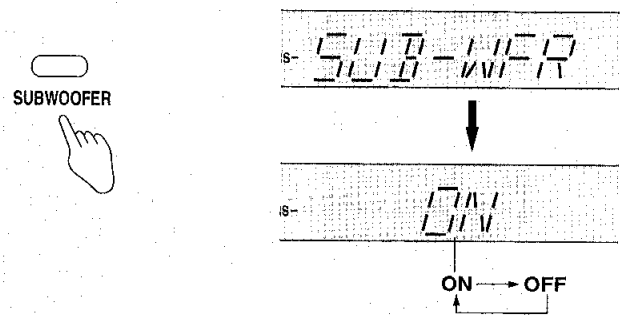
Press [SUBWOOFER] to select "ON" or "OFF".

"SUB-WFR" appears on the display and the current setting, "ON" or "OFF," is shown. Press again to switch between "ON" and "OFF."

ON: select if you are using a subwoofer.

OFF: select if you are not using a subwoofer.



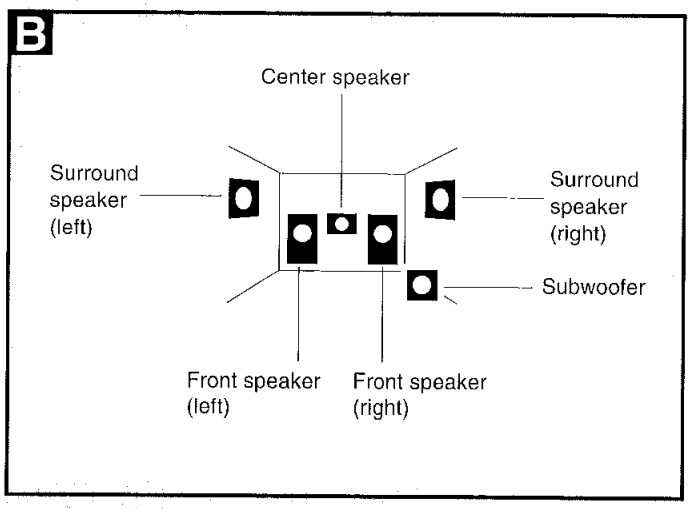


B The speaker indicators

This part of the display indicates which speakers sound comes from.

The corresponding indicators will not light if you selected "NONE" during the speaker setting procedure (➡ pages 16 and 17), or if you turned the subwoofer off (see above).

The surround and center speaker indicators do not light when STEREO mode is selected (➡ page 20).



Do these steps to get the most from your home theater system.

Adjusting speaker output level

Adjust speaker level so the output from all the speakers is the same apparent level when sitting where you would normally enjoy a source.

1 Press [A] to turn on SPEAKERS A.

You cannot adjust when SPEAKERS B is selected.

2 by remote control only

Press [TEST] to output the test signal.

"TEST" appears on the display.
The signal is output from each speaker in the following order for about two seconds each:

L: Front speaker (left)
C: Center speaker
R: Front speaker (right)
RS: Surround speaker (right)
LS: Surround speaker (left)
SW: Subwoofer

Speakers set as "NONE" or "OFF" are skipped.

Note

DSP switches to SURROUND mode when the test starts.

3 by remote control

Press [VOL (– or +)] to set the volume level normally used for enjoying the source.

Note

Use [BALANCE] if the left right balance of the front speakers is off.

4 by remote control only

Press [LEVEL] to select the speaker channel to adjust.

The current level appears on the display.
Press again to change the speaker channel.

Speakers set as "NONE" or "OFF" are skipped.

5 by remote control only

Press [–] or [+] to adjust the level to the same apparent level as the front speakers.

The four channels can be adjusted between –10 dB and +10 dB, with zero being the current level of the front speakers.

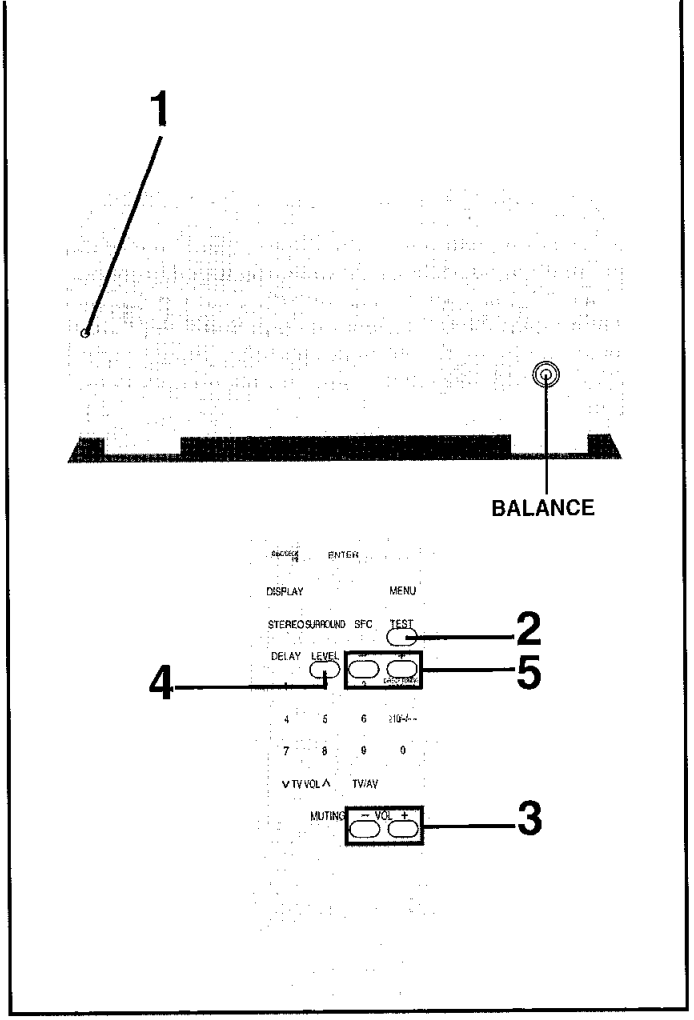
6 Repeat 4 and 5 for each speaker channel.

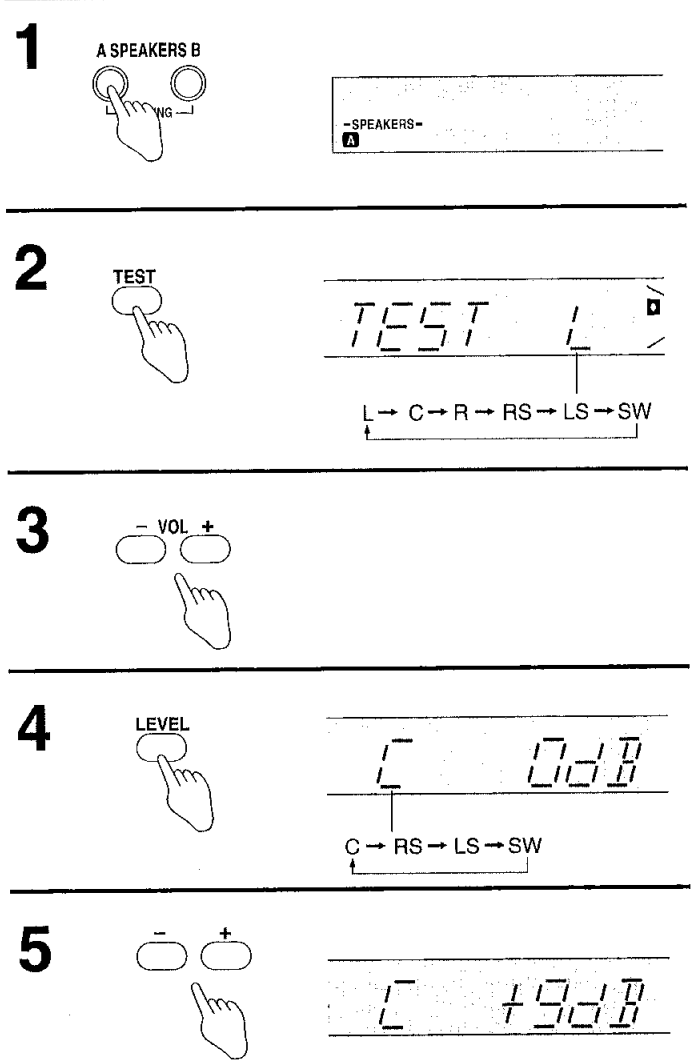
To stop the test signal

Press [TEST].

Note

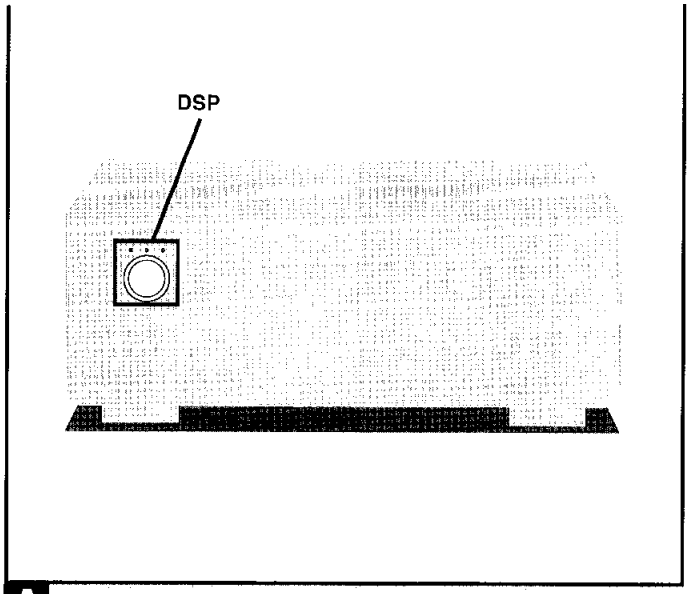
The test signal will not be output if DSP DEFEAT is engaged. Ensure DSP is ON (➡ page 21).





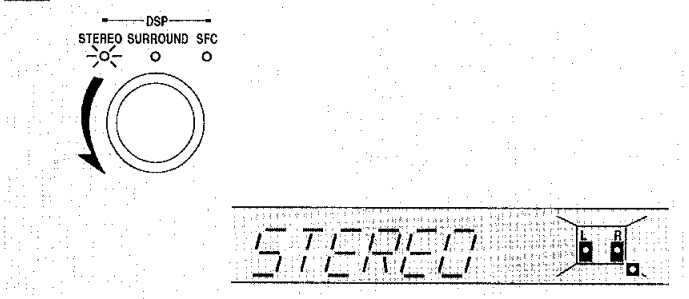
Digital Signal Processor (DSP)

You can take advantage of the following modes with this unit.



A STEREO mode

Use this mode when you want to listen to stereo sources, whether they are digital or analogue, or when you want to playback Dolby Digital or DTS sources through two channels. The sounds usually fed through the other speakers are down-mixed so they are output through the left and right front speakers. There may be some change in the overall sound when surround sources are down-mixed.

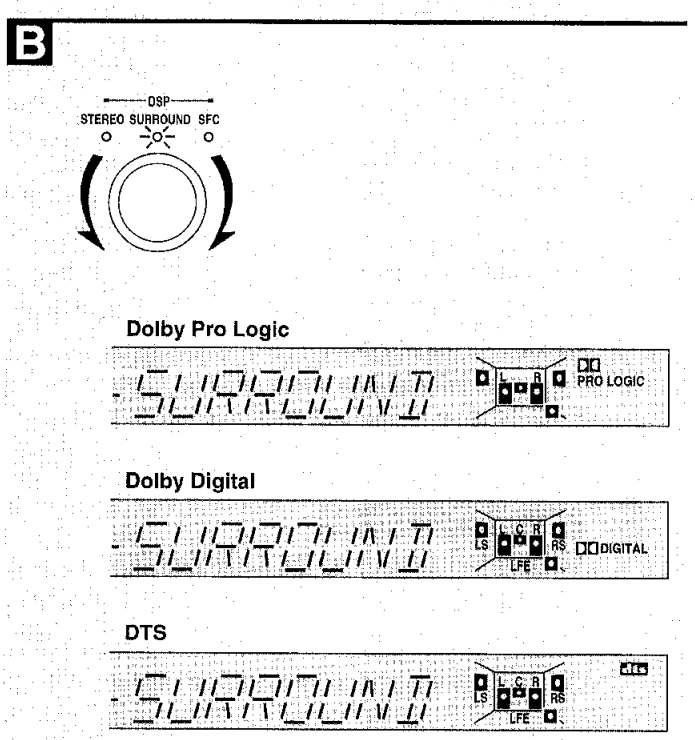


B SURROUND mode

By selecting this mode while digital input is being used, the unit automatically determines the kind of digital source being used (Dolby Digital, Dolby Surround, or DTS), and processes it accordingly. Select this mode also when you are playing back an analogue source, VCR for example, that has been recorded in Dolby Surround.

Software with the following mark can be played back in this mode.

DOLBY DIGITAL DOLBY SURROUND DIGITAL dts SURROUND



The following indicators light depending on the source.

PRO LOGIC
When playing analogue sources.
When playing digital sources with PCM signals.
When playing Dolby Digital sources that contain Dolby Pro Logic.

DIGITAL
When playing Dolby Digital sources.

dts
When playing DTS sources.

Manufactured under license from Dolby Laboratories.
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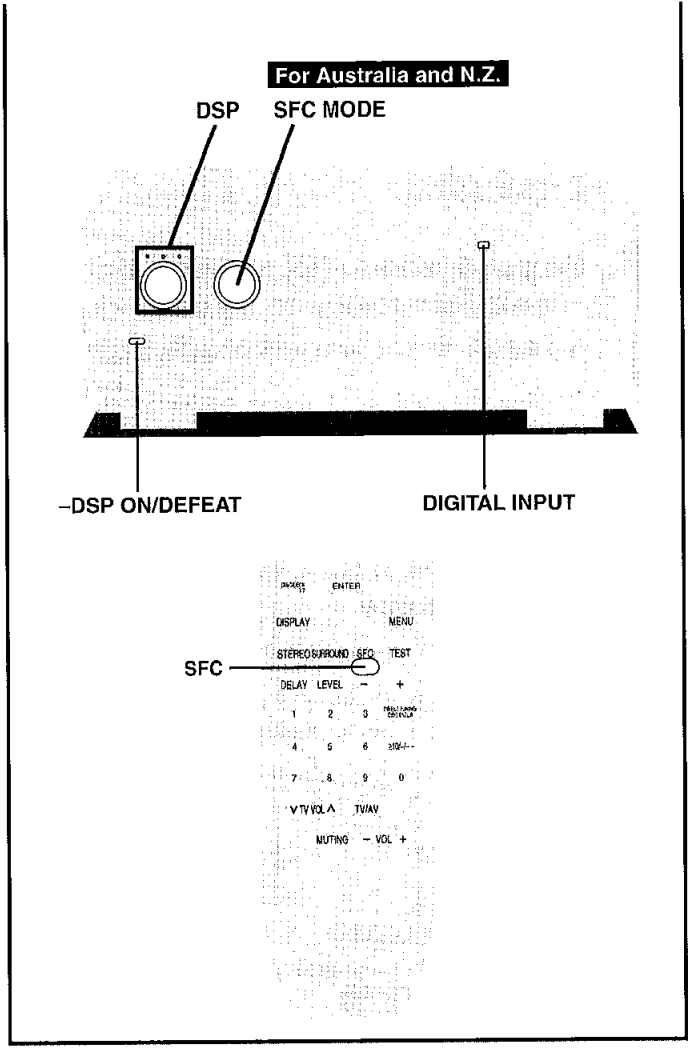
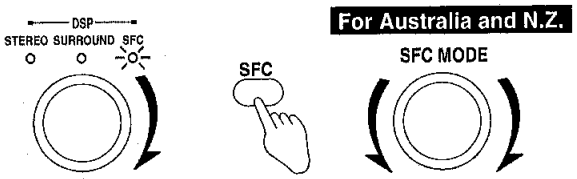
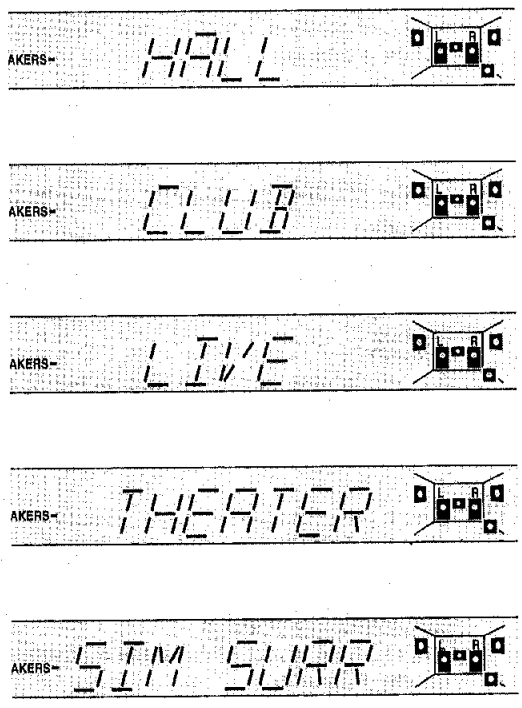
Manufactured under license from Digital Theater Systems, Inc. "DTS" and "DTS" Digital Surround" are trademarks of Digital Theater Systems, Inc. © 1996 Digital Theater Systems, Inc. All rights reserved.







Digital Signal Processor (DSP)

SFC modes

by remote control only for the United Kingdom

The SFC (Sound Field Control) function gives presence and spread, thereby enhancing and enriching the music or movie.
Read the following explanations to better understand how to make your selection.

Note

SFC is designed to add surround-like effects to stereo sources. Select the appropriate mode when playing back Dolby Digital, DTS, or Dolby Surround sources.

HALL
This mode imparts a reflection and spread which will make you feel as if you are in a large concert hall.

CLUB
Like a jazz club, this mode provides an exciting and intimate atmosphere. It simulates the sound field of a relatively small room with a low ceiling and hard reflective surfaces, for a "live" sound with enhanced presence to bring the performers up close.

LIVE
Primarily for vocal pieces, this mode adds gloss to the vocals and you'll feel as though you were hearing a live stage performance.

THEATER
You can clearly perceive the directions and source of the movie. Real ambience of sound can also be recreated naturally using this mode.

SIM SURR (SIMULATED)
Choose this mode if little or no sound will be heard from the surround speakers.
You can feel as if you were in a more expanded space adding to the actual sound from the source.
This mode also adds effect to monaural sources by outputting sound from surround speakers.

If the beginning of a track is cut off when playing CDs

The beginning of a track may not be heard if you play CDs in STEREO mode.
You can solve this by engaging the PCM FIX mode.
Press and hold [DIGITAL INPUT] for four seconds.
"PCM FIX" appears on the display.

This mode can be selected for each source, but is canceled when the unit is turned off.

Note

- The PCM FIX mode can be selected in STEREO mode only.
- Dolby Digital and DTS sources cannot be played while PCM FIX mode is on.
- Noise can occur if DTS sources are played while PCM FIX mode is engaged. To avoid this, be sure to turn PCM FIX mode off after use.

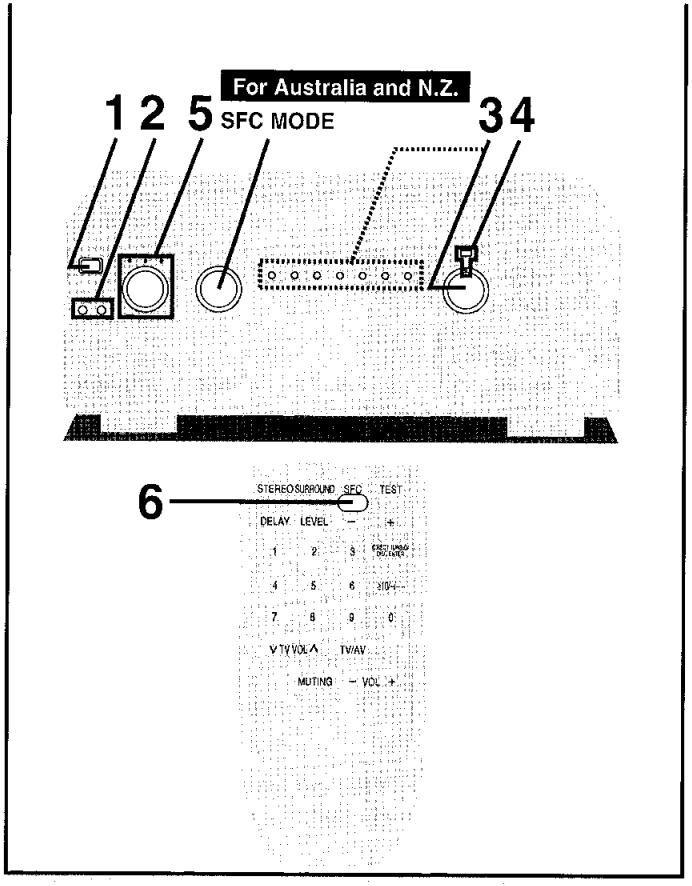
If reception is weak or "TUNED" fails to light completely while playing the radio

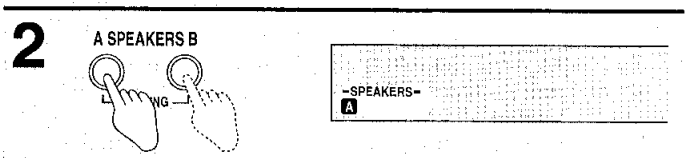
Press and hold [–DSP ON/DEFEAT] until "DEFEAT" appears on the display.
Press and hold again to turn DSP on. The STEREO mode is selected.

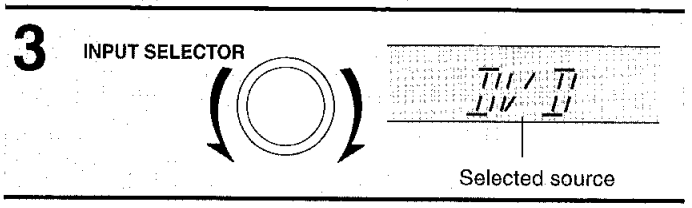
This allows you to play back sound without it passing through the digital signal processor (DSP). When this is selected, no sound will go through the center or surround speakers or the subwoofer.

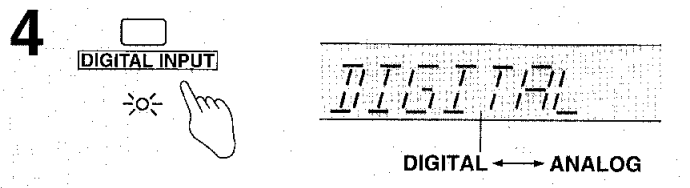
Note

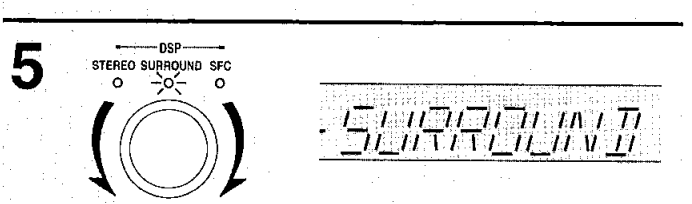
When "DEFEAT" is selected the sound mode indicators (STEREO, SURROUND and SFC) go out and these modes can not be selected.

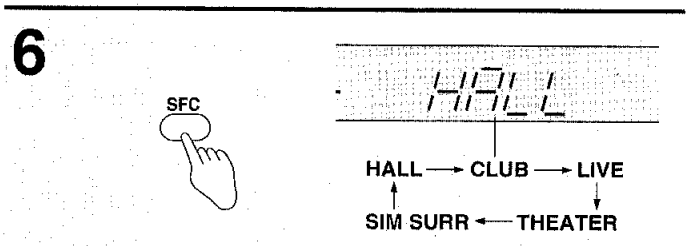












Enjoying the sounds

Before operation, set [VOLUME] to the "MIN" position.

1 Press [⏻/I].

2 Press [A] and/or [B] to select the speaker system(s) to be used.

A and B refer to the speaker terminals at the rear of the unit.

"SURROUND" and "SFC" cannot be turned on if [B] is pressed. Press [A] to enjoy these modes.

If the button is pressed once more, the indicator will switch off and no sound will be heard from the speakers.

3 Turn [INPUT SELECTOR] to select the desired source.

(Refer to the appropriate operating instructions for details.)

The indicator corresponding to the selected source lights and the source is shown on the display.

PHONO: To listen to phono discs
TUNER: To listen to radio broadcasts
CD: To listen to compact discs
DVD: To enjoy DVD
TV: To watch TV
VCR: To watch video tapes

For the United Kingdom

TAPE/MD: To listen to cassette tapes or MDs

For Australia and N.Z.

TAPE: To listen to cassette tapes or MDs

Note

To watch a video (or DVD) or the TV, set the TV to either the TV mode or VIDEO mode.

4 (only if you select TV, CD or DVD in the above step) Press [DIGITAL INPUT] to select "DIGITAL" or "ANALOG".

Switches between "DIGITAL" and "ANALOG" each time the button is pressed.

The "DIGITAL INPUT" indicator lights when DIGITAL is selected.

5 Turn [DSP] to select the desired mode.

The DSP indicator corresponding to the selected mode lights and that mode is displayed.

Note

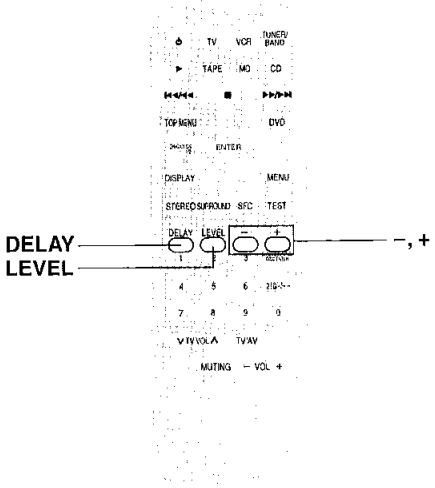
Be sure to select the mode appropriate to the source you are playing (➡ pages 20 and 21).
Dolby Digital and DTS sources cannot be played with the SFC modes.

6 (only if you select SFC in the above step) Press [SFC] to select the desired SFC mode.

For Australia and N.Z.

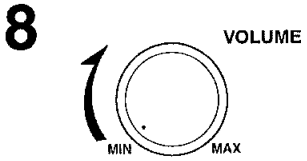
You can also select SFC modes by turning [SFC MODE] on the main unit.

(continued on next page)



7 Start the source.

8 Adjust the volume.



While using the SFC modes

To adjust speaker level **by remote control only**

① **Press [LEVEL] to select the speaker channel to adjust.**
Each time the button is subsequently pressed, the speaker whose level is to be set is selected in the listed sequence.
C → RS → LS → SW
Speakers for which "NONE" or "OFF" has been set are skipped.

② **Press [–] or [+] to adjust the output level.**
Channels C, RS, LS, and SW can be adjusted between –10 dB and +10 dB.

To adjust delay time **by remote control only**

You can adjust surround channel only.
By adjusting delay time, you can adjust the effects of the SFC modes.

① **Press [DELAY].**
When the button is pressed, the current delay time is displayed.

② **Press [–] or [+] to set the time.**
Select a delay time to suit your individual needs.
Delay time can be set at 10 milliseconds (ms) intervals between 10 and 100 ms.
The factory settings for each mode are 50 ms.

For your reference

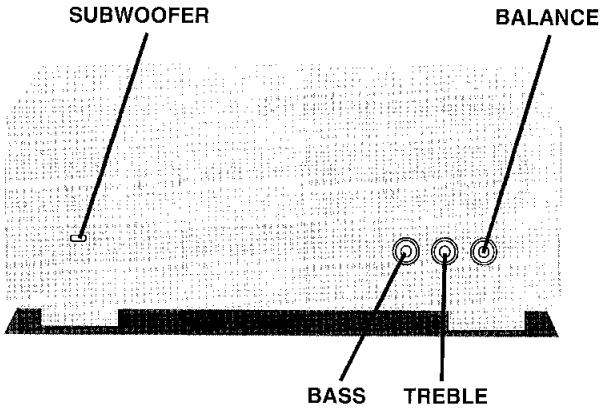
Settings for volume level and delay time can be done for each SFC mode.

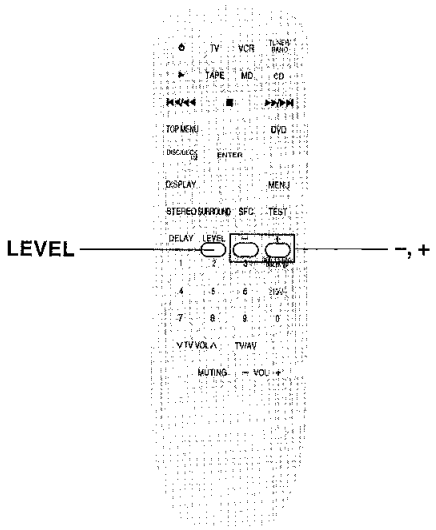
When you finish listening

Be sure to reduce the volume, and switch the power to the standby condition by pressing [⏻/I].

For your reference

- **If you are using a VCR and you select TAPE, CD, TUNER, or PHONO**
  The picture will remain on the screen.
- **About DSP mode**
  The DSP modes can be set for each source. Once you have set the mode for a source, the mode is engaged whenever that source is selected.
  These modes are automatically switched to STEREO if SPEAKERS B is selected or both speakers are turned off. When SPEAKERS B is turned off or SPEAKERS A is selected, the mode is switched back to the latest mode.
- **Only Dolby Digital, DTS or PCM signals (44.1 kHz or 48 kHz) can be reproduced through the digital terminal**
  The digital input signal of sampling frequencies 96 kHz and other signal formats such as MPEG cannot be reproduced on this unit.





A To adjust the tone quality

Turn [BASS] to adjust the low frequency sound.
Turn [TREBLE] to adjust the high frequency sound.

B To adjust the sound balance

Turn [BALANCE] to adjust the left/right sound balance.

C Turning the subwoofer off

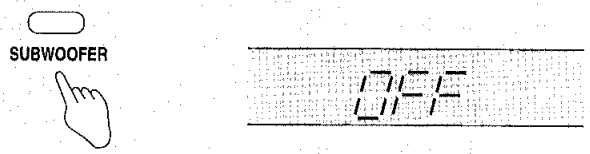
You can turn the subwoofer off when you want to listen to music.

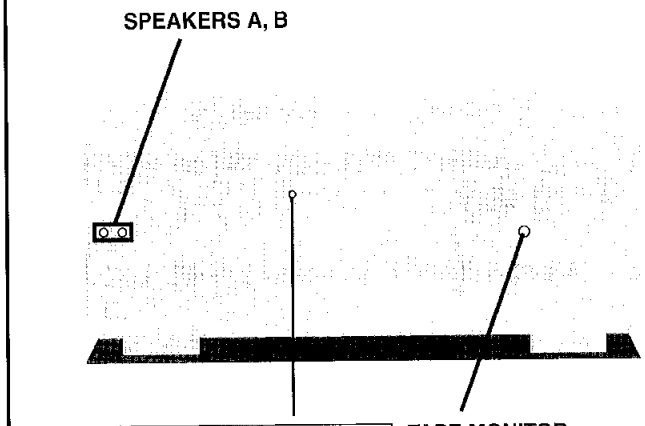
Press [SUBWOOFER] to select "OFF".

(➡ Page 18.)

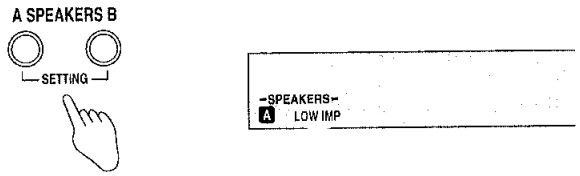
You can also adjust the volume of the subwoofer in STEREO mode.

① **Press [LEVEL].**
② **Press [+] or [–].**
The volume can be adjusted between –10 dB and +10 dB.





A



B

A For front speakers with an impedance under 6 Ω

Press and hold [A] or [B] until "LOW IMP" lights up on the display.

If even one of the speakers being used has an impedance under 6 Ω, press and hold down either [A] or [B] for 4 seconds or more to set the impedance on the main unit to LOW.

(Press and hold down once again for 4 seconds or more to turn it off.)

Note that when "LOW IMP" is illuminated, SPEAKERS A and B cannot both be used at the same time.

To change speakers:
e.g. To use SPEAKERS B, press [A] ("A" goes out), and then press [B] to activate SPEAKERS B.

B The TAPE MONITOR indicator

This indicator lights in the following two situations:

1. **For the United Kingdom**
   While TAPE/MD is selected.
   For Australia and N.Z.
   While TAPE is selected.
2. While TAPE MONITOR is in use.

To use the tape monitor

(For use when you have connected a graphic equalizer to the TAPE terminals.)

For the United Kingdom

If [TAPE MONITOR] is pressed while a source other than TAPE/MD is selected, the "TAPE MONITOR" indicator lights and the tape monitor comes on.

For Australia and N.Z.

If [TAPE MONITOR] is pressed while a source other than TAPE is selected, the "TAPE MONITOR" indicator lights and the tape monitor comes on.

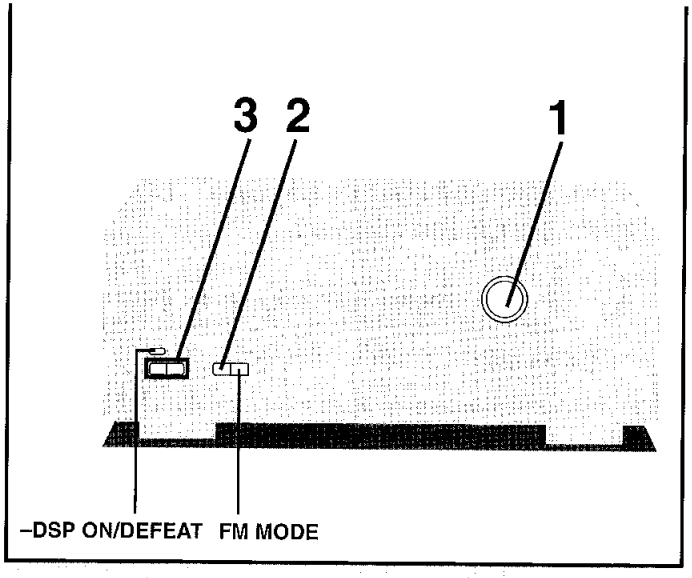
Sources other than tape can still be selected with [INPUT SELECTOR] while the "TAPE MONITOR" indicator is on.

Press [TAPE MONITOR] again to turn the tape monitor off.

(➡ See "Making a recording" on page 36 for details on how to use the tape monitor during recording.)

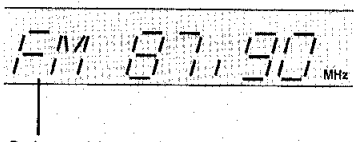
Note

- The tape monitor cannot be used when TV, DVD, or CD digital input is being used.
- If you are using the tape monitor and you select a digital input source, the tape monitor switches off.
- Depending on the settings on the graphic equalizer, there may be some distortion.



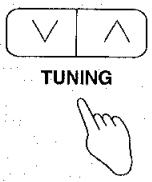
1 INPUT SELECTOR

2



Selected band

3



The radio

Sequential tuning

Use the tuning buttons to tune-in radio stations.

1 Turn [INPUT SELECTOR] to select "TUNER".

2 Press [BAND] to select "FM" or "AM".

3 Press [TUNING (∨ or ∧)] to tune to the desired frequency.

"TUNED" lights up when tuned.
"STEREO" lights up when an FM stereo broadcast is received.

To make an automatic search for stations
If [TUNING (∨ or ∧)] is held down for an instant until the frequency begins to scroll, the broadcast stations are tuned in automatically when one is found.

Note
Tuning may stop automatically if any jamming is encountered.

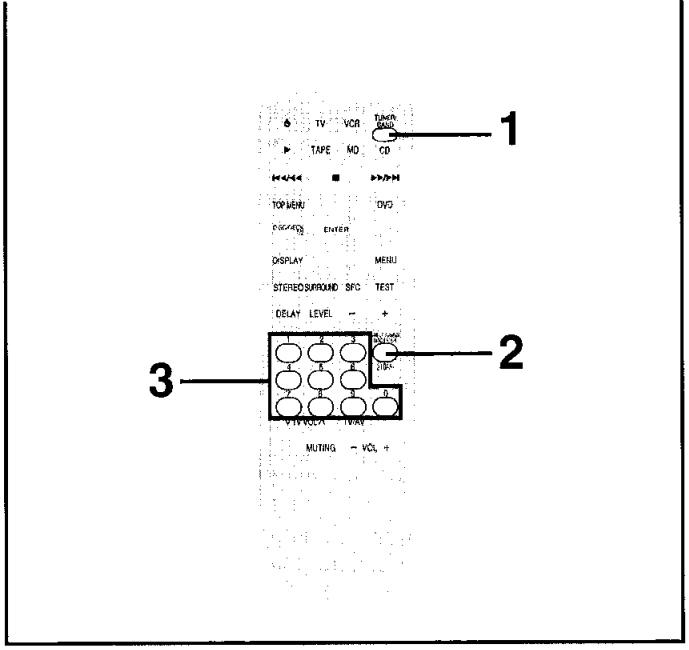
If noise is excessive in the FM stereo mode
Press [FM MODE].
("STEREO" will go out, and "MONO" will light up).

The broadcast will be monaural, but noise will be reduced.
If the button is pressed once more, the stereo mode resumes.

If there is hissing or thumping while the radio is playing
Press and hold [–DSP ON/DEFEAT] to select "DEFEAT".
(➡ Page 21 for details about DSP DEFEAT.)

For your reference
The tuner can pick up interference from DVD players. If this occurs turn the DVD player off.

To change the AM frequency step
Press and hold [BAND] for about 3 seconds when AM band is selected. (The frequency step changes from 9 kHz to 10 kHz.)
To return to the previous step, press and hold [BAND] for about 3 seconds again.



Direct tuning

by remote control only

Specify the frequency using the numbered buttons on the remote control to directly tune to the station.

1 Press [TUNER/BAND].

This will set the remote control to operate the tuner.
The selector on the receiver will change to "TUNER".
Each time the button is pressed, the band will change as follows,
FM ⇄ AM.

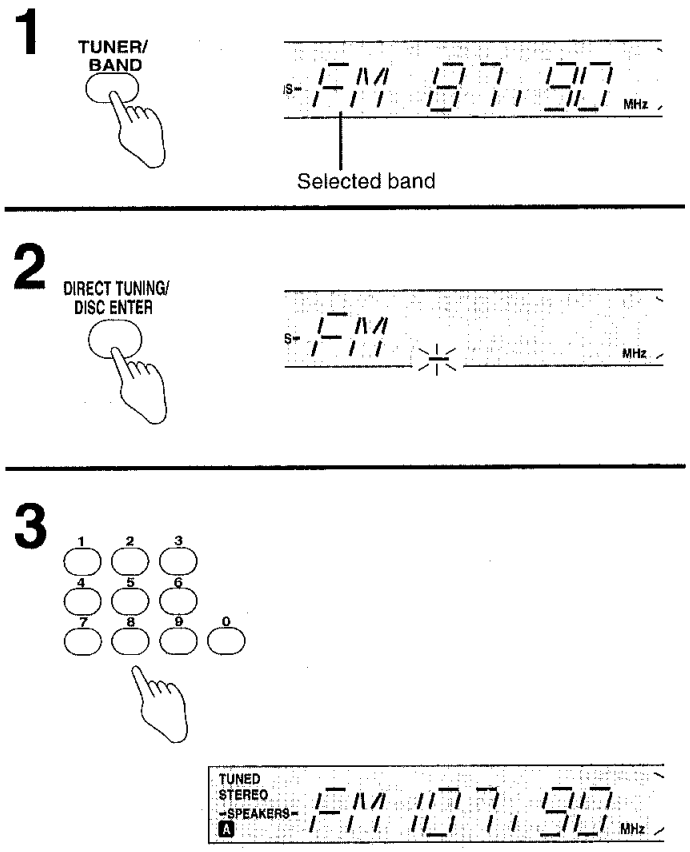
2 Press [DIRECT TUNING/DISC ENTER].

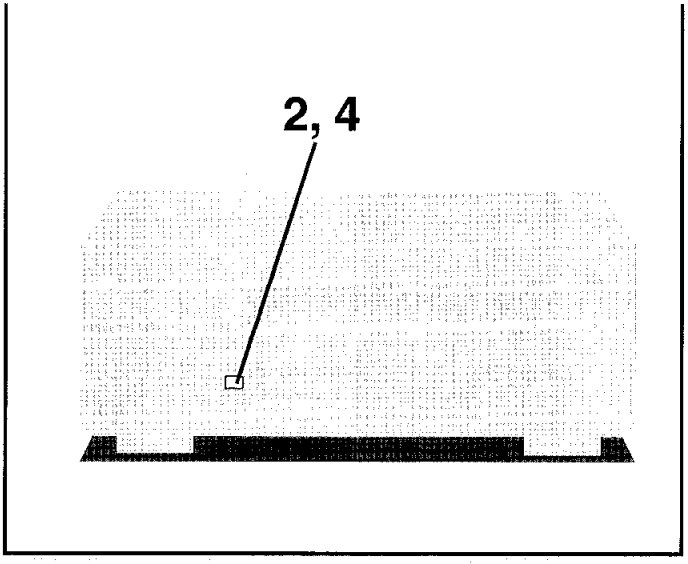
3 While cursor display is flashing (approx. 10 seconds) Press the numbered buttons to enter the frequency.

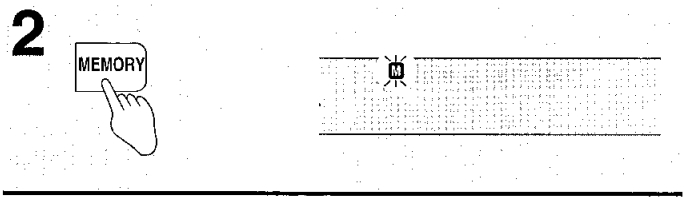
If the desired FM frequency is 107.90 MHz, press [1]→[0]→[7]→[9]→[0].
If the frequency has been input correctly, the displayed frequency will blink once.

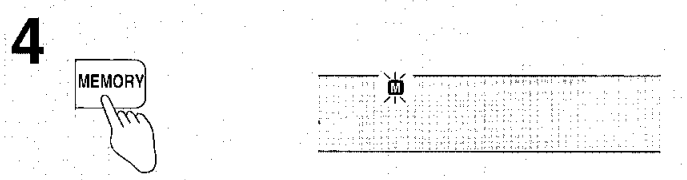
Note

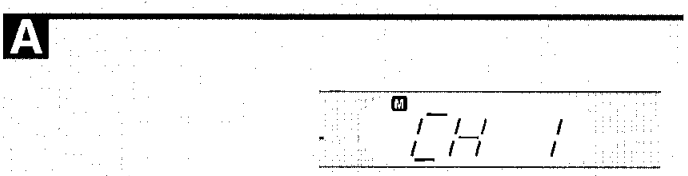
1. If no button is pressed while the cursor display is flashing, the display will return to the frequency which is currently being received.
   To re-specify the frequency, repeat the procedure from step 2.
2. If the frequency has not been input correctly, "ERROR" will be displayed.
   In this case, re-enter the frequency.











Preset tuning

Presetting radio stations into the memory channels of this unit makes selecting stations simple.

A total of 30 FM and AM stations can be preset.

Please remember this
If a new station is preset into a channel, the setting for the station which was previously entered in that channel will be automatically erased.

Automatic memory presetting

Automatic memory presetting allows this unit to search for stations and then preset them into memory.

1 Tune to the lowest frequency in FM.

(➡ Pages 26 and 27.)

2 Press and hold [MEMORY].

Automatic memory presetting will start.
All the FM stations the unit can receive are preset in channels 1 to 30.

3 Tune to the lowest frequency in AM.

(➡ Pages 26 and 27.)

4 Press and hold [MEMORY].

Automatic memory presetting will start.
All the AM stations the unit can receive are preset in channels 21 to 30. (Any FM stations in these channels will be replaced.)

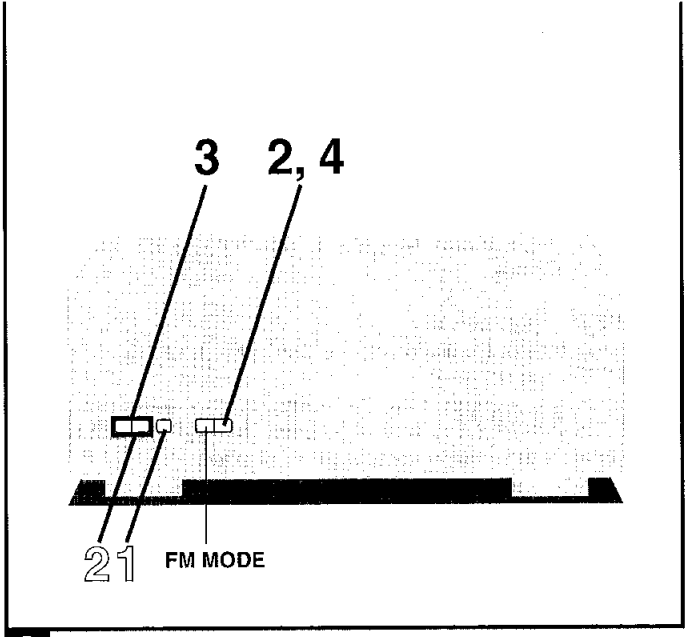
During automatic memory presetting, the memory indicator will flash while the frequency scrolls.

When a station is preset
The memory indicator and the preset channel number will be displayed for approximately 1 second (A).

When presetting is completed
The last station to be preset will be displayed.

Note

Frequencies may not be preset correctly in cases where the broadcast waves are too strong or too weak. In such cases, carry out presetting manually (➡ page 29).



A Manual memory presetting

The desired stations can be preset into the desired channels by the user.

1 Set to the desired frequency.

(➡ Pages 26 and 27.)
If interference or static is keeping you from enjoying an FM broadcast, press [FM MODE] and change to monaural.
You can preset the station in monaural just as in stereo.

2 Press [MEMORY].

To cancel the memory function, press [MEMORY] again.

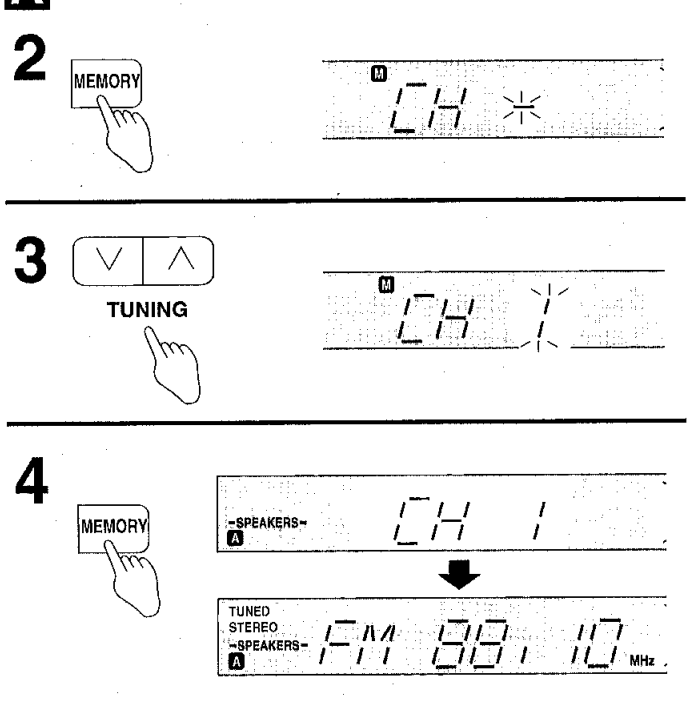
3 Press [TUNING (∨ or ∧)] to select the desired channel.

Holding the buttons down lets you scroll through channels faster.

4 Press [MEMORY].

The channel will blink on the display.

To continue presetting
Repeat steps 1 through 4.



B To listen to preset channels

1 Press [PRESET].

2 Press [TUNING (∨ or ∧)].

Holding down the buttons lets you scroll through channels faster.

The channel number flashes for approximately 5 seconds.
Select the desired channel number during that time.
After 5 seconds, the display will change from the channel number to the frequency.

Note

If you press [PRESET] while the channel number is displayed, the display will change to the frequency.

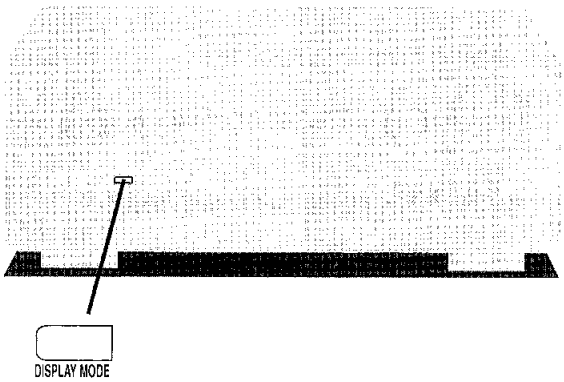
To confirm the channel number of the station being received
Press [PRESET].
(The channel number flashes for approximately 5 seconds.)

Note

The channel number is not displayed if you change the frequency or FM mode setting.

For your reference
Even if the power supply cord is disconnected from the household AC outlet, the memory will retain its contents for approximately one month.

If frequency presettings are accidentally erased
Program the presettings once again.
The power supply cord should remain connected for one hour or more for the memory back-up to be effective.



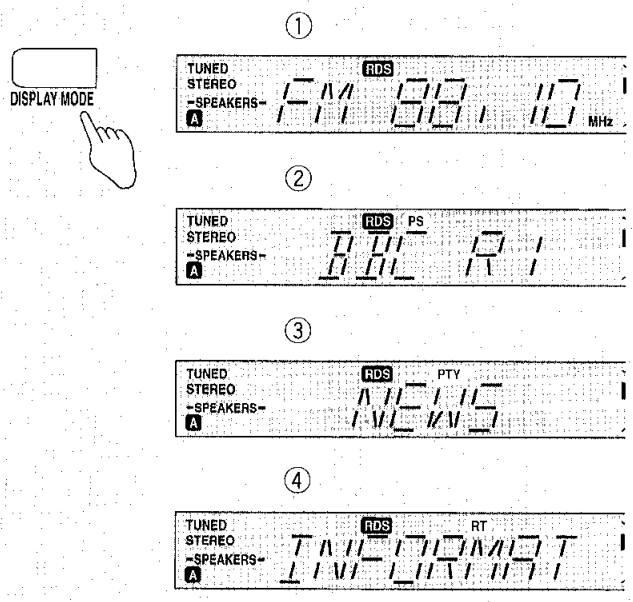
Enjoying RDS broadcasts

For the United Kingdom

RDS (Radio data system) is a multiplex broadcasting system. Along with the audio signals of FM broadcasts, text information and other signals are transmitted to help you enjoy radio more and make tuning into programs easier. This unit can use the following types of signals.

- **PS** (Program service):
  The name of the station can be displayed.
- **PTY** (Program type):
  The type of program can be displayed. This signal can also be used to search for a type of program (➡ page 31). See page 35 for more information about the PTY displays.
- **EON** (Enhanced other networks):
  This signal is used between networked stations to make it easier for listeners to tune into a type of program (➡ page 32).
- **RT** (Radio text):
  This is text transmitted by the station. This unit can show a maximum of 64 characters by scrolling it across the screen. The text could be information about the song playing, traffic and weather reports, phone-in numbers, or police information.

Some areas currently do not have PTY, EON, and RT.



To display RDS information

The display normally shows the radio frequency. When the "RDS" indicator lights, the station is broadcasting RDS signals.

Press [DISPLAY MODE].

Each time the button is pressed, the display changes as follows.

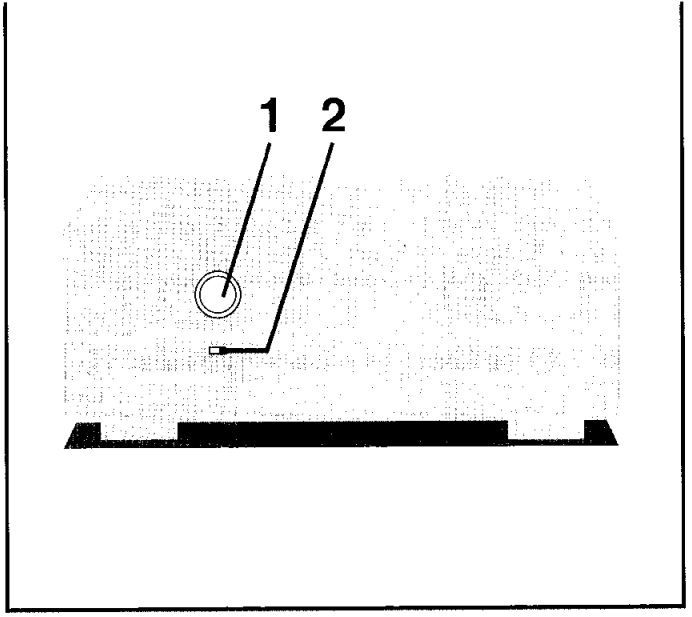
→ ① **Frequency display**
↓
② **PS display**
(See below if PS is not displayed)
↓
③ **PTY display**
("NO PTY" is displayed if PTY signals are not being received, then the frequency is shown again.)
↓
④ **RT display**
(There is no change if RT signals are not being received.)

If RDS signals are not being received, the "RDS" indicator does not light and there is no change when the button is pressed.

For your reference

Occasionally PS isn't displayed even if PS signals are being received. You may be able to see PS if you change the reception mode.
Press and hold [DISPLAY MODE].

The mode switches between "MODE 1" and "MODE 2" every time the button is pressed and held.
If PS isn't displayed, PS signals are not being received. Restore "MODE 1" in this case.



PTY search and EON tuning

Before trying to use these functions, it is necessary to preset radio stations into the receiver's memory (➡ pages 28 and 29). Neither of these functions will work if stations have not been preset.

PTY search

Carry out this operation while listening to an FM broadcast.

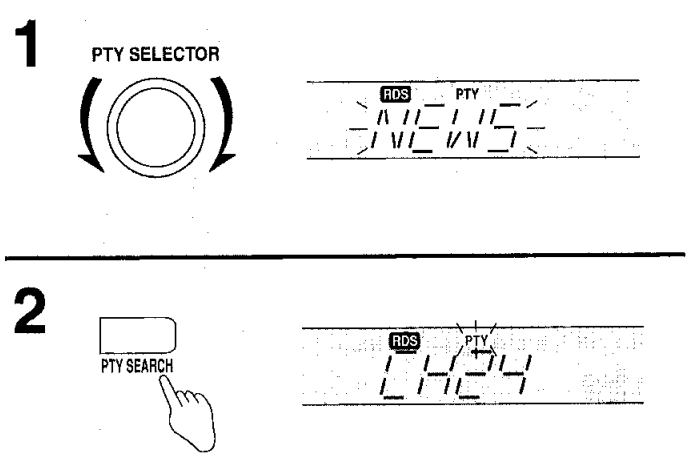
PTY search finds a particular type of program for you.

1 **Turn [PTY SELECTOR] to select the desired program type.**

Each time you turn the selector, the PTY display will change in sequence. (For PTY displays: ➡ page 33.)

2 While the PTY display is flashing (approx. 10 seconds)
Press [PTY SEARCH].

"PTY" flashes while the search is carried out.



When the selected type of program is located

The receiver automatically switches over to the station broadcasting the program. The PTY indicator continues to flash for about two seconds after the program is found. During this time the display changes, first showing the preset channel number, then the frequency of the station, and finally the previously selected display mode is resumed.

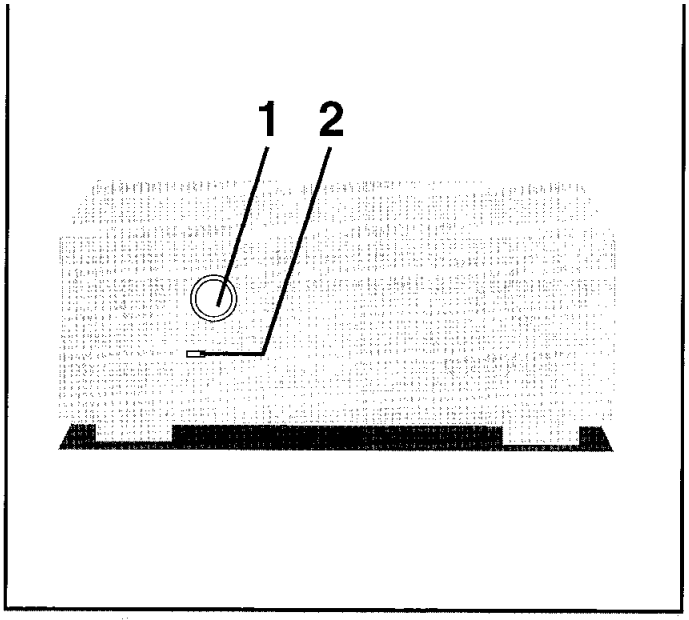
Restarting a search

It is possible to restart the search during the two seconds that the PTY indicator is flashing after the program is found, simply by pressing [PTY SEARCH] again.

It is also possible to search for the same kind of program on another station by pressing [PTY SEARCH] at any time if the display is in PTY mode. If [PTY SEARCH] is pressed in any other mode, the message "SELECT PTY FIRST" scrolls across the display.

If the desired type of program is not found

"NO PTY" will be displayed for a moment, then the current frequency and the receiver will return to the original display.



EON tuning

EON tuning is useful if the type of program you want to listen is not currently being broadcast. It allows you to set the unit to automatically change to a particular type of program when one begins.

EON tuning only works if RDS data and EON signals are being received.
EON tuning finds programs on stations that share EON signals.

1 **Turn [PTY SELECTOR] to select the desired program type.**
Each time you turn the selector, the PTY display will change in sequence. (For PTY displays: ➡ page 33.)

2 While the PTY display is flashing (approx. 10 seconds)
Press [EON].
"EON" will light up.

The current station remains tuned in until the selected type of program begins. When the receiver finds the type of program you selected, "EON" appears on the display and the message "OTHER PROGRAM SERVICE" scrolls from right to left across the display. The receiver automatically changes over at this time. If the type of program you selected is currently broadcasting, the receiver will immediately change to that station.

Note

EON tuning turns OFF if you operate the tuner (pages 26–29), change the input source, or turn the unit OFF.

When "NO EON" is displayed

The broadcast you are presently receiving does not provide EON service.

To check the program type while on reception standby

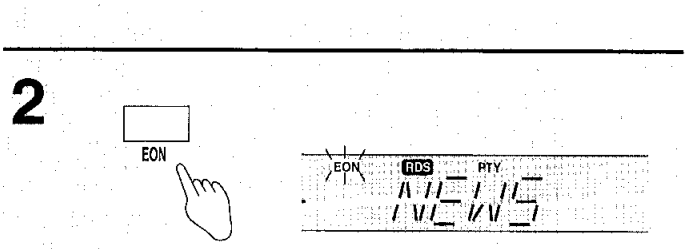
Turn [PTY SELECTOR].
The program type last selected will be displayed for approximately 2 seconds. ("EON" will flash.)

Note

If you turn the selector again while the program type is being displayed, you will turn EON tuning OFF.

To cancel EON tuning

Press [EON].
"EON" will go out.



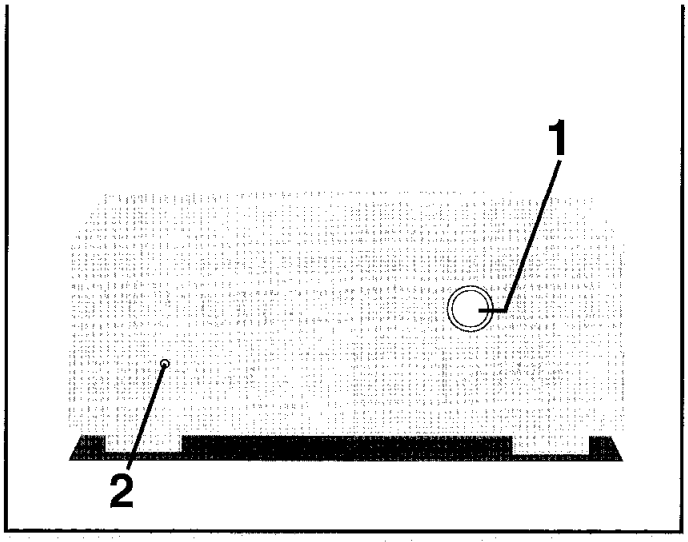
About the PTY display

There are a total of 31 PTY displays on this unit. The display changes each time [PTY SELECTOR] is turned.
The table below shows the order in which the display changes, and also gives an explanation of each display.

Display	Explanation
NEWS	News
AFFAIRS	Current affairs
INFO	Information
SPORT	Sport
EDUCATE	Education
DRAMA	Drama
CULTURE	Culture
SCIENCE	Science
VARIED	Varied
POP M	Pop music
ROCK M	Rock music
M. O. R. M	Middle-of-the-road Music
LIGHT M	Light classical
CLASSICS	Serious classical
OTHER M	Other music
WEATHER	Weather information
FINANCE	Finance
CHILDREN	Children
SOCIAL A	Social affairs
RELIGION	Religion
PHONE IN	Phone in
TRAVEL	Travel
LEISURE	Leisure
JAZZ	Jazz music
COUNTRY	Country music
NATIONAL	National music
OLDIES	Oldies
FOLK M	Folk music
DOCUMENT	Documentary
TEST	Test broadcast
ALARM	Emergency announcement

Note

This unit does not have EBS-Emergency Broadcast System which tunes automatically into emergency broadcasts when they begin.



1 INPUT SELECTOR

2 DVD 6CH INPUT

DVD 6CH INPUT mode

Use this mode to reproduce 6 channel discrete sources that have been connected using analogue 6 channel input. This bypasses the decoders in this unit.

Ensure you have your speakers set up in the following way.
- The front speakers are connected to the A terminals (➡ page 14) and "SPEAKERS A" is selected (➡ page 22).

1 Turn [INPUT SELECTOR] to select "DVD".

2 Press [DVD 6CH INPUT] to select "DVD 6CH".

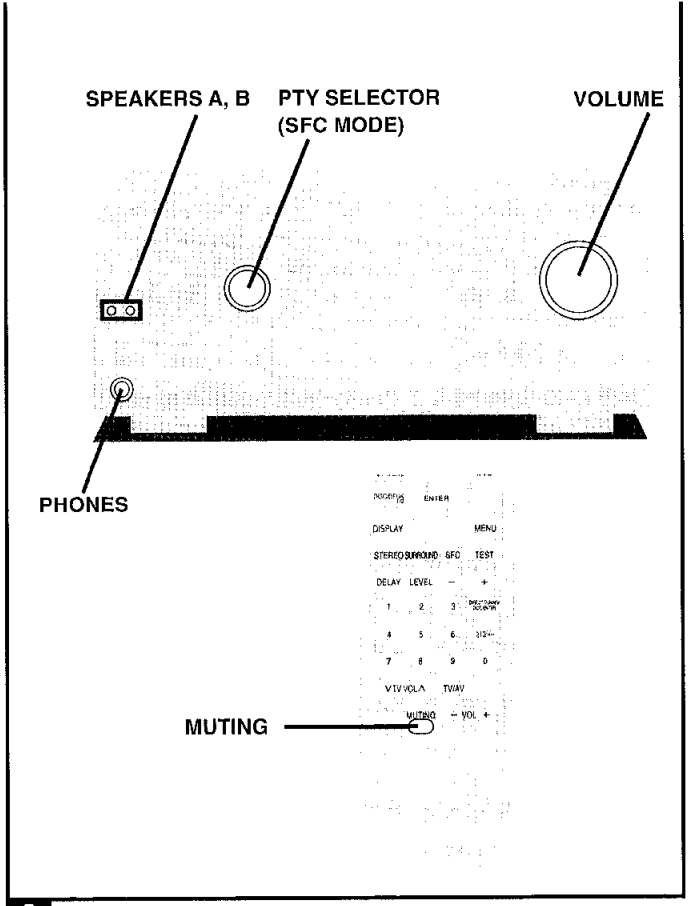
Changes as follows, each time the button is pressed.
DVD 6CH ⇄ DVD (2CH)

Note
- If you press this button while another source (CD, PHONO, etc.) is selected, the receiver switches the source to DVD and engages the DVD 6CH INPUT mode.
- All sound mode indicators are turned off when DVD 6CH INPUT is turned on. The STEREO mode and indicator comes on when DVD 6CH INPUT is turned off.

3 Start the desired source.

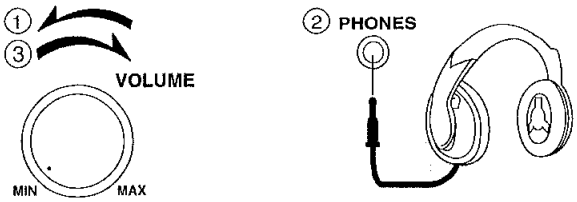
Follow your equipment's operating instructions.

Note
- This mode cannot be turned on while SPEAKERS B is on. If SPEAKERS B is selected or both speakers are turned off when this mode is selected, this mode is automatically canceled. When SPEAKERS B is turned off again or SPEAKERS A is selected, the mode is automatically turned on.
- You cannot select a DSP mode while in the DVD 6CH INPUT mode.
- Any speaker settings you have made (➡ pages 16–19) are ineffective in the DVD 6CH INPUT mode. If you need to change speaker settings, make the settings on the other unit.



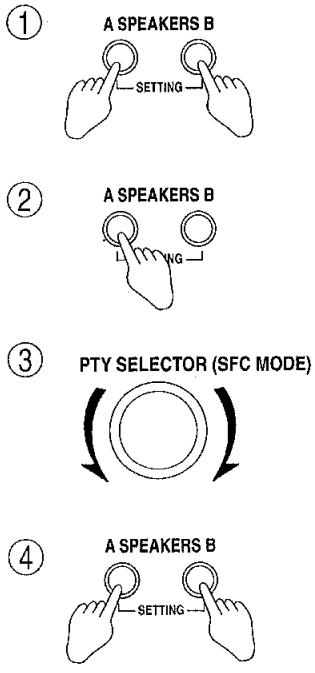
A

B



Headphones (not included)

C



Other functions

A To mute the sound level

by remote control only

Press [MUTING].

The message "MUTING ON NOW" runs repeatedly from right to left across the display as long as the muting function is on.

Press once again to return to the previous volume level.

Note

Muting is canceled when the receiver is turned off.

B To listen through headphones

① Reduce the volume.
② Connect the headphones.

Plug type: 6.3 mm stereo

③ Adjust the volume.

Select STEREO or turn SPEAKERS A and B off when using headphones. Turning the speakers off automatically engages STEREO mode and ensures no sound is heard from the subwoofer. If SURROUND is used, the sound heard through the headphones will seem unusual.

Note

Avoid listening for prolonged periods of time to prevent hearing damage.

C Dynamic range compression

"Dynamic range compression" (DR COMP) is a function for compressing the dynamic range (reproduction level range) of audio signals. It is used for viewing movie software late at night or at other times when high volume levels are not desirable.

This function only works with DR COMP compatible Dolby Digital format software.
The factory setting is "OFF".

① Press [A] and [B] at the same time.

"SETTING" appears on the display.

② Press [A] to select "DR COMP".

Each time the button is pressed the display changes as follows.

SIZE → DISTANCE → FILTER → DR COMP

③ Turn [PTY SELECTOR] ([SFC MODE]) to select the setting.

Each time the selector is turned the display changes as follows.

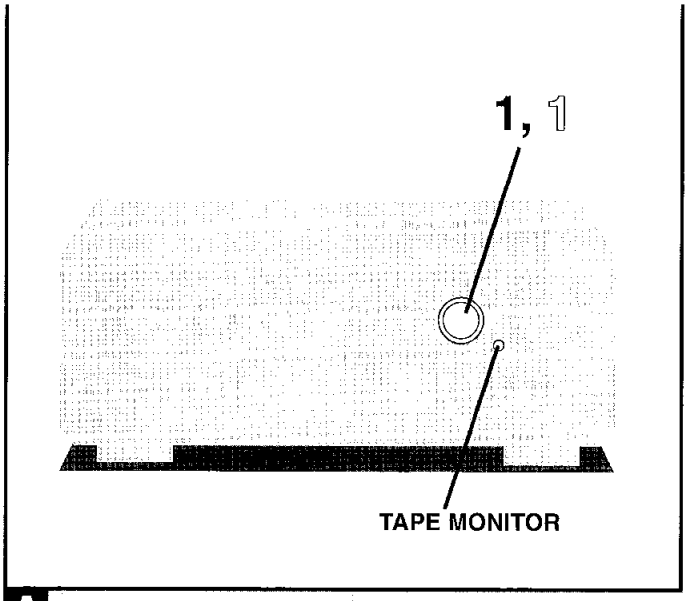
OFF ⇄ STANDARD ⇄ MAX

④ Press [A] and [B].

"COMPLETE" appears on the display.

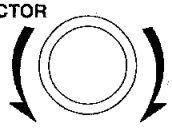
For your reference

When DR COMP is on, scenes that already have a low sound level will be heard as they are. When scenes that are loud occur, the function acts to reduce the peak level.
The sound field will remain intact even if DR COMP is functioning.



A

1 INPUT SELECTOR

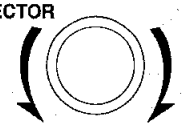


B

TAPE MONITOR

C

1 INPUT SELECTOR



Making a recording

Note

- You cannot record a source connected through a digital terminal.
- When recording CD, DVD, or TV, ensure the source is connected through the corresponding analog terminals (➡ pages 10 and 11) and "ANALOG" input is selected (➡ page 22).
- When you select DVD 6CH INPUT mode, only sound from the front left and right speakers is recorded.

A Recording on a tape deck

Before recording, prepare the tape deck.
See the tape deck's operating instructions for details.

1 Turn [INPUT SELECTOR] to select the source to be recorded.

Any source can be selected except TAPE.

2 Begin recording on the tape deck.

Follow your tape deck's operating instructions.

3 Begin the source to be recorded.

Follow your equipment's operating instructions.

B To monitor the recorded sound

It is possible to check the sound being recorded if your tape deck is a 3 head system.

Press [TAPE MONITOR] on this unit and set the monitor button on the tape deck to "TAPE".

Press [TAPE MONITOR] once again to turn it off.

C Recording on a VCR

Before recording, prepare the VCR.
See the VCR's operating instructions for details.

1 Turn [INPUT SELECTOR] to select the source to be recorded.

Any source can be selected except VCR and TAPE.

Note

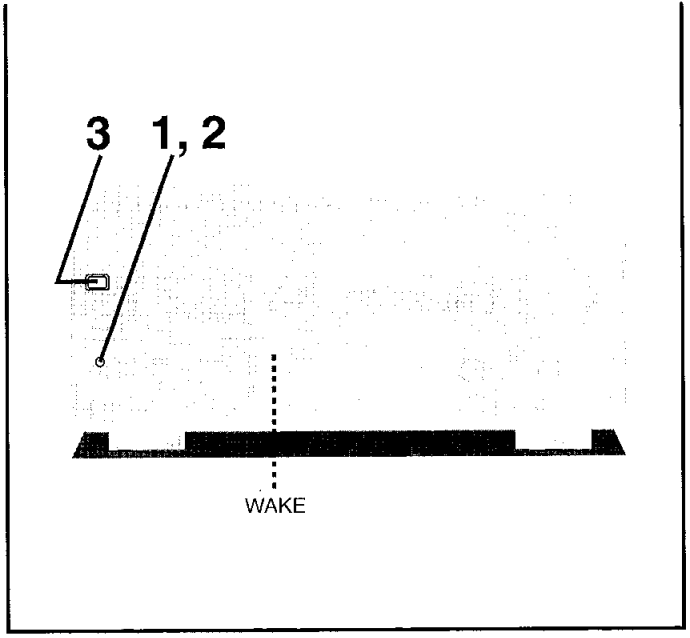
Recording from the tape deck is not possible.

2 Begin recording on the VCR.

Follow your VCR's operating instructions.

3 Begin the source to be recorded.

Follow your equipment's operating instructions.



Timer function

There are two timer functions: the sleep timer and the wake timer.

- **Sleep timer:**
  The unit turns off after a set time.
  It can be set for 30, 60, or 90 minutes.
- **Wake timer:**
  The unit can be set to turn on a certain number of hours after it is turned off.
  It can be set for 5, 7, or 9 hours.

Setting the timers

1 Press [TIMER] to select the desired timer mode.

The timer mode changes as follows:
SLEEP → WAKE → OFF

2 [Within 5 seconds] Press [TIMER] and release when the time you require is displayed.

The display changes as follows:

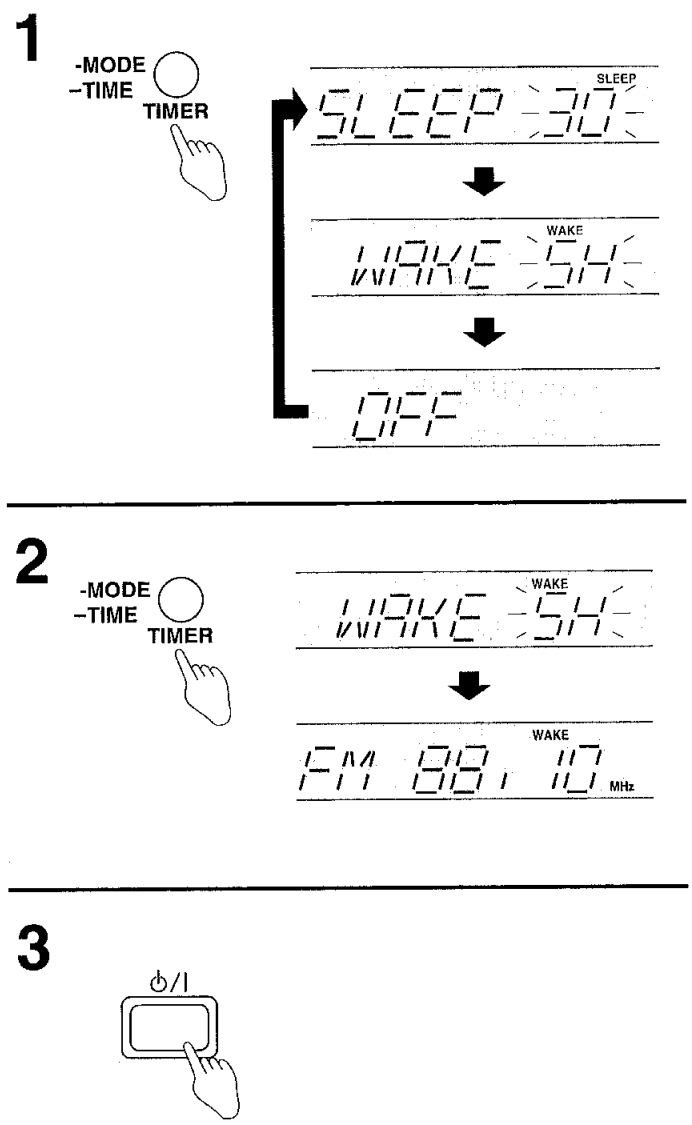
- **In sleep timer mode**
  30 → 60 → 90 (minutes)

- **In wake timer mode**
  5H → 7H → 9H (hours)

The frequency is displayed again 5 seconds after the setting is completed.

3 Wake timer mode only — Press [⏻/I] to turn off the unit.

The "WAKE" indicator lights up.



Checking the remaining time on the sleep timer and the time set for the wake timer
Press [TIMER] once.

Note

Do not press [TIMER] again before the remaining time indication goes out.
The setting may change if you do this.

Changing a setting
Repeat steps 1 and 2.

To cancel the timer
Press [TIMER] until "OFF" is displayed.
"SLEEP" or "WAKE" will go out.

Note

- The timers cannot be used together.
- The sleep timer turns off the receiver, and the wake timer turns on the receiver, but they do not turn off/on any externally connected components.

Troubleshooting guide

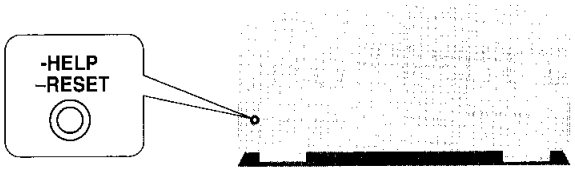
Before requesting service for this unit, check the chart below for a possible cause of the problem you are experiencing. Some simple checks or a minor adjustment on your part may eliminate the problem and restore proper operation.

If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, refer to the directory of Authorized Service Centers (enclosed with this unit) to locate a convenient service center, or consult your dealer for instructions.

Problem	Probable cause(s)	Suggested remedy	Page(s)
While listening to FM broadcasts			
Hiss is heard during stereo broadcasts, but not during monaural ones.	Modulation for the two types is different so some noise may be heard during stereo broadcasts.	• Reduce the treble. • Change the location and direction of the antenna. • Use an outdoor antenna.	24 12, 13 12, 13
Excessive noise in both stereo and monaural broadcasts.	Antenna location and direction poor. Station is distant. DSP is on.	• Use an antenna with more elements. • Select "DSP DEFEAT".	– 21
"STEREO" and "TUNED" indicators flicker.	Antenna location and direction poor. Station is distant.	• Change the location and direction of the antenna. • Use an outdoor antenna.	12, 13 12, 13
Stereo broadcasts highly distorted.	Building or mountain nearby.	• Use an antenna with more elements.	–
While listening to AM broadcasts			
Unusual "beat"sound is heard.	A television is on nearby. Adjacent signal is interfering. DSP is on.	• Separate the two or turn the television off. • Reduce the treble. • Select "DSP DEFEAT".	– 24 21
Low-pitched "hum" is heard when a station is tuned.	Power cord is near the antenna wires. Electronic interference from the power cord is fed to the speakers.	• Separate the power cord from the wires. • Use an outdoor antenna.	– 12, 13
A continuous or intermittent hiss is heard.	Interference from other appliances.	• Separate this unit from such appliances.	–
An AM broadcast station cannot be picked up clearly.	Frequency step is set to 10 kHz.	• Hold down [BAND] for about 3 seconds. This changes the frequency step to 9 kHz.	26
While enjoying the surround modes			
Sound is not heard from the center, surround or subwoofer speakers.	The presence setting of the speaker has been incorrectly set to "NONE" or "OFF". The DSP mode has been incorrectly set to "STEREO".	• Set the type and presence setting of each speaker correctly. • Set to SURROUND mode.	17, 18 20
SURROUND and SFC cannot be selected.	DSP is off. SPEAKERS B is on.	• Select "DSP ON". • Turn SPEAKERS B off.	21 22
Cannot play Dolby Digital or DTS sources.	The PCM FIX mode may be on. An SFC mode is on.	• Turn PCM FIX mode off. • Switch to SURROUND or STEREO mode.	21 20

Problem	Probable cause(s)	Suggested remedy	Page(s)
Common Problems			
Unit does not come on.	The power cord plug is not fully inserted.	• Confirm the plug is fully inserted.	–
Sound is not heard.	The speaker indicators are off.	• Turn on the speaker indicators.	22
	The tape monitor function is on.	• Press the tape monitor button.	25
	The muting function is on.	• Press the muting button on the remote control.	35
	Incomplete or incorrect connection to speakers and external equipment.	• Check all connections.	10–15
	The incorrect input source has been selected.	• Select the correct source.	22
	Digital signals this unit cannot decode are being played.	• Either have the player convert the signals so this unit can handle them or switch to ANALOG input.	22, 23
Cannot play CD, DVD, or TV.	The DIGITAL input mode is set to DIGITAL or ANALOG.	• Change the setting to suit the type of connection you have made.	22
Sound suddenly stops or none is heard when the unit is switched on. "OVERLOAD" appears on the display.	The protection circuitry has functioned because: the positive and negative speaker wires have shorted; speakers with a lower impedance than this unit's rated impedance are being used; the speakers are under strain through excessive volume, excessive power, or by being used in a high temperature environment.	• Switch off the unit, determine and correct the cause, then switch the unit on. • Use speakers with the right impedance rating.	– 14, 15
"F70" appears on the display.		• Turn off the power and then turn it on again, or disconnect the AC power supply cord and then connect it to your household AC outlet again. (If "F70" remains on the display, consult an authorized service center or your dealer.)	–

About the HELP function



If you make a mistake in operation or if sound output stops due to some operation which was performed, the HELP function displays information which can be useful for indicating the method by which this condition can be remedied.
If "ERROR" or scrolling characters (for instance, "SPEAKER OFF NOW") appear on the display during operation, carry out the following operation.

Press [-HELP, –RESET].

The method for remedying this situation will be displayed.

For your reference
If the above button is pressed for 2 seconds or more until "RESET" appears on the display, the operation settings for the unit will be initialized to the settings made at the time of shipment.
However, any stations which have been preset into memory will not be erased at this time.

Maintenance

To clean this unit, wipe with a soft, dry cloth.
If the surfaces are extremely dirty, use a soft cloth dipped in a soap-and-water solution or a weak detergent solution.

- Never use alcohol, paint thinner or benzine to clean this unit.
- Before using chemically treated cloth, read the instructions that came with the cloth carefully.

Specifications (DIN 45 500)

AMPLIFIER SECTION

Power output (at 240 V)	
DIN 1 kHz (T.H.D. 1 %)	2 x 100 W (6 Ω)
20 Hz–20 kHz continuous power output both channels driven	2 x 80 W (6 Ω)
Total harmonic distortion	
rated power at 20 Hz–20 kHz	0.05 % (6 Ω)
half power at 1 kHz	0.03 % (6 Ω)
Power output at 1 kHz each channel driven	
DIN 1 kHz (T.H.D. 1 %)	
Front	2 x 100 W (6 Ω)
Center	100 W (6 Ω)
Surround	2 x 100 W (6 Ω)
Power bandwidth	
both channels driven, –3 dB	10 Hz–40 kHz (6 Ω)
Damping factor	30 (6 Ω)
Load impedance	
Front	
A or B	4–16 Ω
A and B	8–16 Ω
Center	6–16 Ω
Surround	6–16 Ω
Frequency response	
PHONO	RIAA standard curve (30 Hz–15 kHz) ±0.8 dB
CD, TAPE/MD (TAPE), DVD, TV, VCR	10 Hz–40 kHz, ±3 dB
Input sensitivity and impedance	
PHONO	3 mV/47 kΩ
CD, TAPE/MD (TAPE), DVD, TV, VCR	200 mV/22 kΩ
S/N at rated power (6 Ω)	
PHONO	70 dB (IHF, A: 80 dB)
CD, TAPE/MD (TAPE), DVD, TV, VCR	75 dB (IHF, A: 85 dB)
Tone controls	
BASS	50 Hz, +10 to –10 dB
TREBLE	20 kHz, +10 to –10 dB
Output voltage	
TAPE REC (OUT), VCR OUT	200 mV
Channel balance (250 Hz–6.3 kHz)	±1 dB
Channel separation	55 dB
Headphones output level and impedance	430 mV/330 Ω
Subwoofer frequency response (–6 dB)	7–200 Hz

Digital input	
Optical	CD, DVD, TV

FM TUNER SECTION

Frequency range	87.50–108.00 MHz
Sensitivity	
S/N 30 dB	1.5 μV/75 Ω
S/N 26 dB	1.3 μV/75 Ω
S/N 20 dB	1.2 μV/75 Ω
IHF usable sensitivity (IHF '58)	1.5 μV/75 Ω
IHF 46 dB stereo quieting sensitivity	22 μV/75 Ω
Total harmonic distortion	
MONO	0.2 %
STEREO	0.3 %
S/N	
MONO	60 dB (73 dB, IHF)
STEREO	58 dB (67 dB, IHF)
Frequency response	
20 Hz–15 kHz	+1 dB, –2 dB
Alternate channel selectivity	
±400 kHz	65 dB
Capture ratio	1.5 dB
Image rejection at 98 MHz	40 dB
IF rejection at 98 MHz	70 dB
Spurious response rejection at 98 MHz	70 dB
AM suppression	50 dB
Stereo separation	
1 kHz	40 dB
Carrier leak	
19 kHz	–30 dB (–35 dB, IHF)
38 kHz	–50 dB (–55 dB, IHF)
Channel balance (250 Hz–6.3 kHz)	±1.5 dB
Limiting point	1.2 μV
Bandwidth	
IF amplifier	180 kHz
FM demodulator	1000 kHz
Antenna terminal	75 Ω (unbalanced)

AM TUNER SECTION

Frequency range	522–1611 kHz (9 kHz steps) 530–1620 kHz (10 kHz steps)
Sensitivity	20 μV, 330 μV/m
Selectivity (at 999 kHz)	55 dB
IF rejection (at 999 kHz)	50 dB

VIDEO SECTION

Output voltage at 1 V input (unbalanced)	1±0.1 Vp-p
Maximum input voltage	1.5 Vp-p
Input/output impedance	75 Ω (unbalanced)

GENERAL

Power supply	AC 230–240 V, 50 Hz
Power consumption	240 W (in standby condition: 2 W)
Dimensions (W x H x D)	430 x 158 x 324.5 mm
Mass	9.7 kg

Notes:

1. Specifications are subject to change without notice. Mass and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

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(En)

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